Source Water Assessment

A Hydrogeologic Susceptibility and Vulnerability Assessment for Totem Trailer Court Well No.4 Anchorage, Alaska PWSID #210574.002

DRINKING WATER PROTECTION PROGRAM REPORT 770

Alaska Department of Environmental Conservation

Source Water Assessment for Totem Trailer Court Well No.4 Anchorage, Alaska PWSID#21574.002

DRINKING WATER PROTECTION PROGRAM REPORT 770

The Drinking Water Protection Program is producing Source Water Assessments in compliance with the Safe Drinking Water Act Amendments of 1996. Each assessment includes a delineation of the source water area, an inventory of potential and existing contaminant sources that may impact the water, a risk ranking for each of these contaminants, and an evaluation of the potential vulnerability of these drinking water sources.

These assessments are intended to provide public water systems owners/operators, communities, and local governments with the best available information that may be used to protect the quality of their drinking water. The assessments combine information obtained from various sources, including the U.S. Environmental Protection Agency, Alaska Department of Environmental Conservation (ADEC), public water system owners/operators, and other public information sources. The results of this assessment are subject to change if additional data becomes available. If you have any additional information that may affect the results of this assessment, please contact the Program Coordinator of DWPP, (907) 269-7521.

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Source Water Assessment for Totem Trailer Court Well No.4 Source of Public Drinking Water, Anchorage, Alaska

Drinking Water Protection Program
Alaska Department of Environmental Conservation

EXECUTIVE SUMMARY

The public water system for Totem Trailer Court Well is a Class A (community) water system consisting of four wells in the Anchorage area. This report assesses Well No. 4. The three other wells are assessed in a separate report. Identified potential and existing sources of contaminants for Totem Trailer Court Well No. 4 includes: sewer lines, recognized contaminated sites, residential areas, roads, motor vehicle repair stores, printers, motor vehicle waste disposal wells and recreation trails. These identified potential and existing sources of contamination are considered sources of bacteria and viruses, nitrates and/or nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals and other organic chemicals. Overall, Totem Trailer Court Well No.4 received a vulnerability rating of **Low** for nitrates/nitrites, bacteria/viruses and synthetic organic chemicals, **Medium** for other organic chemicals, **High** for volatile organic chemicals and inorganic chemicals.

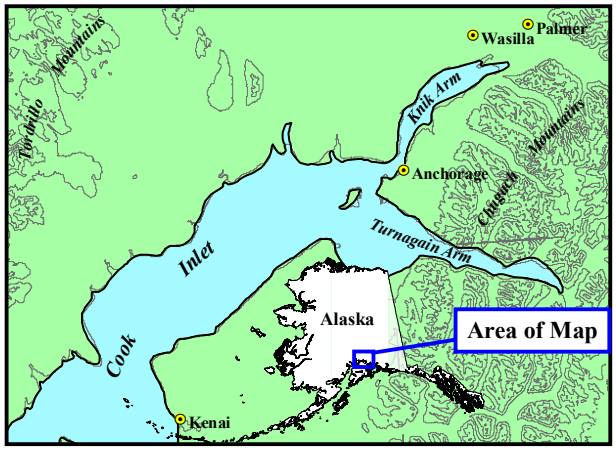


Figure 1. Index map showing the location of Anchorage, Alaska

INTRODUCTION

The Alaska Department of Environmental Conservation (ADEC) is completing source water assessments for all public drinking water sources in the State of Alaska. The purpose of this assessment is to provide public water system owners and/or operators, communities, and local governments with information they can use to preserve the quality of Alaska's public drinking water supplies. The results of this source water assessment can be used to decide where voluntary protection efforts are needed and feasible, and what efforts will be most effective in reducing contaminant risks to your water system.

This source water assessment combines a review of the natural conditions at the site and the potential and existing contaminant risks. These are combined to determine the overall vulnerability of the drinking water source to contamination.

DESCRIPTION OF THE ANCHORAGE AREA, ALASKA

Location

Anchorage, located in south-central Alaska, encompasses 1,698 square miles of land and 264 square miles of water. The area containing a majority of the urban development, commonly referred to as the Anchorage Bowl, encompasses approximately 180 square miles [*Partick, Brabets, and Glass, 1989*] and envelopes the low lands of the area. This area is bounded on the east by the Chugach Mountains and the north, west, and south by the Knik and Turnagain Arm of Cook Inlet (Figure 1). In recent times, urban development has extended eastward along the flanks of the Chugach Mountains. This area, known locally as the Anchorage Hillside, contains development at elevations exceeding 3,700 feet in elevation above sea level.

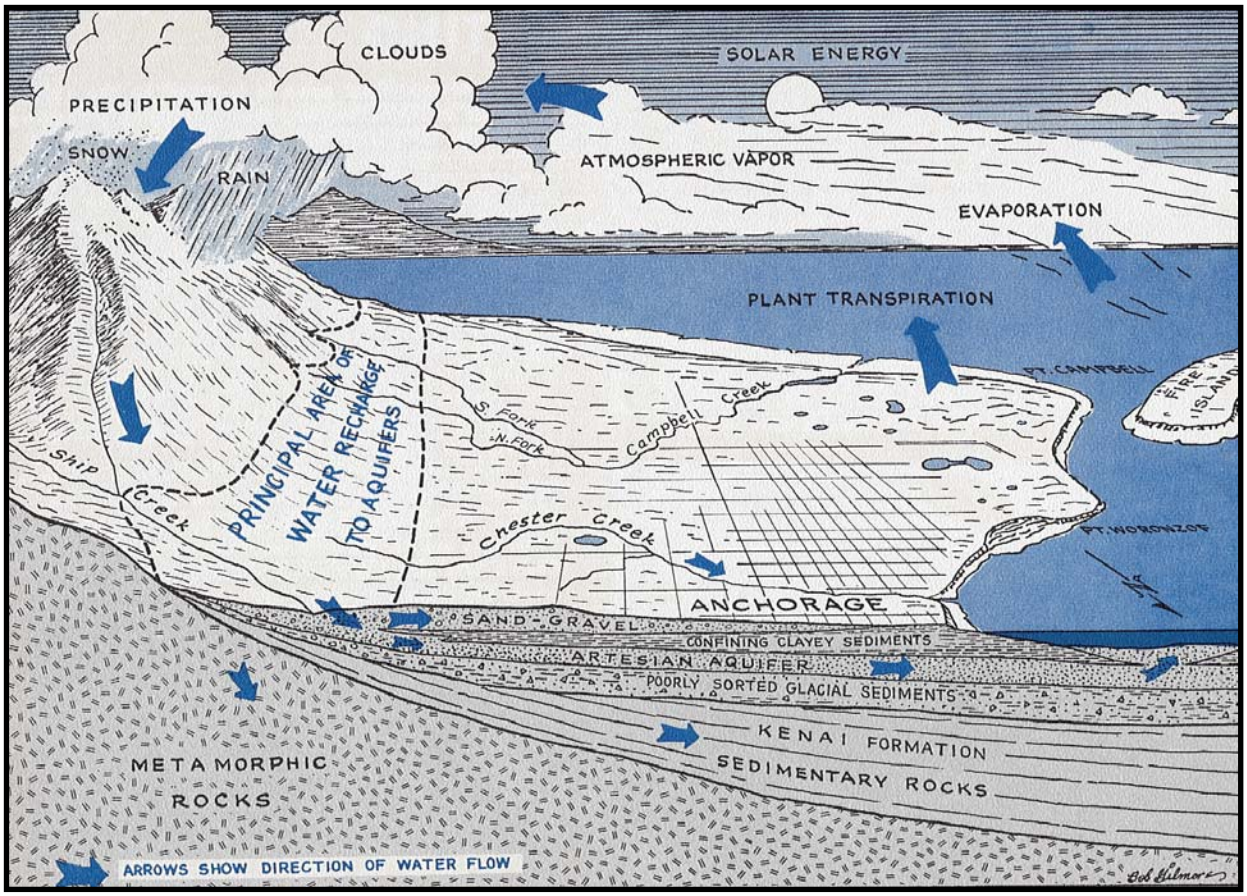


Figure 2. Generalized hydrologic cycle in the Anchorage area [*Barnwell, George, Dearborn,Weeks, and Zenone*, 1972].

Climate

The Anchorage area climate is somewhat transitional in that it does not experience large daily and annual temperature fluctuations like those experienced in the interior of Alaska nor does it experience high amounts of precipitation typified by gulf coast regions. Mean annual precipitation at the Anchorage International Airport is approximately 16 inches per year. On average, Anchorage receives a total snow accumulation of 69 inches per year. Precipitation generally increases inland toward the Chugach Mountains where annual precipitation may exceed 160 inches per year [*Barnwell, George, Dearborn, Weeks, and Zenone*, 1972]. Mean daily temperature ranges from 65^{o} F during July to 8^{o} F in January [*Western Regional Climate Center*, 2000].

Physiography and Groundwater Conditions

Surface elevations in the Anchorage area range from sea level at Knik and Turnagain Arms to well over 5,000 feet in the peaks that bound the area. Glacial moraine and outwash deposits primarily mantle the surface of the Anchorage Bowl.

The backbone of the Chugach Mountains is composed primarily of metamorphic marine and volcanic rocks (bedrock). These high peaks that bound Anchorage's east side are flanked with colluvium or slope deposits. These slope deposits eventually grade into the glacial and stream deposits at lower elevations in the Anchorage Bowl.

In the Anchorage area, two principal groundwater flow systems or aquifers exist (see Figure 2). The upper unconfined aquifer or water-table aquifer is separated from a lower confined aquifer system by layers of silty, clayey glacially derived sediments (confining layer) [*Ulery and Updike*, 1983]. The lower confined aquifer system consists of a series of hydrologically interconnected layers and lenses of gravel, sand and silt that, collectively, form the confined aquifer. The confining layer ranges from 0 to 270 feet thick throughout the Anchorage area and generally thins with increasing distance from Cook Inlet, thus pinching out at the mountain front [*Patrick, Brabets, and Glass*, 1989].

Water enters or recharges these two aquifer systems in several different ways. Along the front of the Chugach Mountains, groundwater seeps from fractures in

bedrock into the sediments. At these higher elevations, rain and snowmelt also enters the sediments. This area along the mountain front is considered the principal recharge area for wells in the Anchorage area. Precipitation in the low lands may also percolate directly into the ground. Lastly, aquifers may also be recharged by streams where surface water percolates into surrounding permeable sediments (losing reaches of streams). Groundwater flow in the confined aquifer is generally east to west from the mountain front toward Cook Inlet and Turnagain Arm, except in areas where the direction of flow is influenced by large municipal or industrial production wells. The direction of groundwater flow in the upper unconfined aquifer is more variable due to the influence from surfacial topography as well as its close connection with surface water bodies.

TOTEM TRAILER COURT PUBLIC DRINKING WATER SYSTEM

Totem Trailer Court is a Class A (community) water system. The system consists of four wells in the Anchorage area. This report assesses Well No.4 (See Map 1 of Appendix A). The other three sources are assessed separately in Report No. 769. Well No. 4 is located at an elevation of approximately 150 feet above sea level.

The 1996 Sanitary Survey indicates that the well is installed with caps providing a sanitary seal. A properly installed sanitary seal may provide protection against contaminants from entering the source waters at the well casing. Due to the date that the well was installed it is suspected that the well was not grouted according to ADEC regulations. Proper grouting provides added protection against contaminants traveling along the well casing and into source waters.

The well log for Well No. 4 is unavailable. The well log for Well No. 1, which is ¼ mile east, was used to complete this assessment. The log indicates that a confining layer exists from 12ft-73ft below the surface.

The confining layers may provide protection from contaminates entering the aquifer. However, the clay layers tend to thin out towards the mountains allowing contaminants that enter the subsurface near the base of the mountains to enter the confined aquifer uninhibited by the absence of any protective layer.

This system operates 365 days per year and serves 480 residents through 192 service connections.

TOTEM TRAILER COURT WELL NO.4 PROTECTION AREA

In order to evaluate whether a drinking water source is at risk, we must first evaluate what are the most likely pathways for surface contamination to reach the groundwater. Some areas are more likely to allow contamination to reach the well than others. These areas are determined by looking at the characteristics of the soil, groundwater, aquifer, and well.

The most probable area for contamination to reach the drinking water well is the area that contributes water to the well, the groundwater recharge area. This area is designated as the Drinking Water Protection Area (DWPA). Because releases of contaminants within the DWPA are most likely to impact the drinking water well, this area will serve as the focus for voluntary protection efforts.

An outline of the immediate watershed was used to determine the size and shape of the DWPA for Totem Trailer Court Well No.4. Available geology was also considered to take into account any uncertainties in groundwater flow and aquifer characteristics to arrive at a meaningful DWPA (Please refer to the Guidance Manual for Class A Public Water Systems for additional information).

The DWPAs established for wells by the ADEC are usually separated into four zones, limited by the watershed. These zones correspond to differences in the time-of-travel (TOT) of the water moving through the aquifer to the well. An analytical calculation was used to determine the size and shape of the DWPA. The input parameters describing the attributes of the aquifer in this calculation were adopted from the U.S. Geological Survey (*Patrick, Brabets, and Glass, 1989*), and State of Alaska Department of Water Resources (*Jokela et. al., 1991*).

The time of travel for contaminants within the water varies and is dependent on the physical and chemical characteristics of each contaminant. The following is a summary of the four DWPA zones and the calculated time-of-travel for each:

Table 1. Definition of Zones

Zone	Definition
A	¼ the distance for the 2-yr. TOT
B	Less than the 2 year TOT
C	Less Than the 5 year TOT
D	Less than the 10 year TOT

INVENTORY OF POTENTIAL AND EXISTING CONTAMINANT SOURCES

The Drinking Water Protection Program has completed an inventory of potential and existing sources of contamination within Totem Trailer Court Well No.4 Drinking Water Protection Area. This inventory was completed through a search of agency records and other publicly available information. Potential sources of contamination to the drinking water aquifer include a wide range of categories and types. Potential drinking water contaminants are found within agricultural, residential, commercial, and industrial areas, but can also occur within areas that have little or no development.

For the basis of all Class A public water system assessments, six categories of drinking water contaminants were inventoried. They include:

- Bacteria and viruses;
- Nitrates and/or nitrites;
- Volatile organic chemicals
- Heavy metals, cyanide, and other inorganic chemicals,
- Synthetic organic chemicals, and
- Other organic chemicals.

The sources are displayed on Maps 2 -6 in Appendix C and summarized in Table 1 of Appendix B.

RANKING OF CONTAMINANT RISKS

Once the potential and existing sources of contamination have been identified, they are assigned a ranking according to what type and level of risk they represent. Ranking of contaminant risks for a "potential" or "existing" source of contamination is a function of toxicity and volumes of specific contaminants associated with that source.

Tables 2 through 7 in Appendix B contain the ranking of potential and existing sources of contamination with respect to bacteria and viruses, nitrates and/or nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals.

VULNERABILITY OF TOTEM TRAILER COURT WELL NO.4 DRINKING WATER SOURCE

Vulnerability of a drinking water source to contamination is a combination of two factors:

- Natural susceptibility; and
- Contaminant risks.

Each of the six categories of drinking water contaminants has been analyzed and an overall vulnerability score of 0 to 100 is ultimately assigned:

Natural Susceptibility (0 – 50 points)

+

Contaminant Risks (0 – 50 points)

=

Vulnerability of the

Drinking Water Source to Contamination (0 – 100).
A score for the Natural Susceptibility is achieved by analyzing the properties of the well and the aquifer.

Susceptibility of the Wellhead (0 – 25 Points)

+

Susceptibility of the Aquifer (0 – 25 Points)

=

Natural Susceptibility (Susceptibility of the Well)
(0 – 50 Points)

Table 2 shows the Susceptibility scores and ratings for the wells serving Totem Trailer Court Well No.4.

Table 2. Susceptibility of the well

	Score	Rating
Susceptibility of the Wellhead	5	Low
Susceptibility of the Aquifer	6	Low
Natural Susceptibility	11	Low

Contaminant risks to a drinking water source depend on the type, number or density, and distribution of contaminant sources. This data has been derived from an examination of existing and historical contamination that has been detected at the drinking water source through routine sampling. It also evaluates potential sources of contamination. Table 3 summarizes the Contaminant Risks for each category of drinking water contaminants.

Water from Well No. 4 mixes with the water from the other three wells prior to distribution. Sampling of the water occurs after the water mixes, thus it is unfeasible to detect which source the contamination is coming from. This report uses the sampling history of the water after it mixes with the other three sources.

Table 3. Contaminant Risks

Category	Score	Rating
Bacteria and Viruses	25	Medium
Nitrates and/or Nitrites	25	Medium
Volatile Organic Chemicals	50	Very High
Heavy Metals, Cyanide, and Other Inorganic Chemicals	50	Very High
Synthetic Organic Chemicals	22	Medium
Other Organic Chemicals	32	High

Appendix D contains fourteen charts, which together form the 'Vulnerability Analysis' for a source water assessment for a public drinking water source. Chart 1 analyzes the 'Susceptibility of the Wellhead' to contamination by looking at the construction of the well and its surrounding area. Chart 2 analyzes the 'Susceptibility of the Aquifer' to contamination by looking at the naturally occurring attributes of the water source and influences on the groundwater system that might lead to contamination. Chart 3 analyzes 'Contaminant Risks' for the drinking water source with respect to bacteria and viruses. The 'Contaminant Risks' portion of the analysis considers potential sources of contaminants as well as a review of contamination that has or may have occurred, but has not arrived or been detected at the well. Lastly, Chart 4 contains the 'Vulnerability Analysis for Bacteria and Viruses'. Charts 5 through 14 contain the Contaminant Risks and Vulnerability Analyses for nitrates and nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals, respectively.

Table 4 contains the overall vulnerability scores (0 – 100) and ratings for each of the six categories of drinking water contaminants. Note: scores are rounded off to the nearest five.

Table 4. Overall Vulnerability

Category	Score	Rating
Bacteria and Viruses	45	Medium
Nitrates and Nitrites	40	Medium
Volatile Organic Chemicals	45	Medium
Heavy Metals, Cyanide and Other Inorganic Chemicals	60	High
Synthetic Organic Chemicals	40	Medium
Other Organic Chemicals	35	Low

Bacteria and Viruses
The contaminant risk for bacteria and viruses is high with sewer lines presenting the most significant risk to the drinking water well (See Chart 3 – Contaminant Risks for Bacteria and Viruses in Appendix D).

Recent sampling of the well indicates that no bacteria and viruses have been detected. .

After combining the contaminant risk for bacteria and viruses with the natural susceptibility of the well, the overall vulnerability is medium.

Nitrates and Nitrites
The contaminant risk for nitrates and nitrites is high with sewer lines presenting the most significant risk to the drinking water well.
Recent historical sampling data indicates that nitrates have not been detected.

After combining the contaminant risk for nitrates and nitrites with the natural susceptibility of the well, the overall vulnerability of the well to contamination is medium.

Volatile Organic Chemicals
The contaminant risk for volatile organic chemicals is medium with sewer lines, roads, motor vehicle dealerships presenting the most significant risk to the drinking water source. (See Chart 7 – Contaminant Risks for Volatile Organic Chemicals in Appendix D).

Recent sampling indicates that no volatile organic chemicals have been detected in the source waters.

After combining the contaminant risk for volatile organic chemicals with the natural susceptibility of the wells, the overall vulnerability of the wells to contamination is medium.

Heavy Metals, Cyanide, and Other Inorganic Chemicals
The contaminant risk for heavy metals, cyanide and other inorganic chemicals is very high with sewer lines, roads, residential areas and existing contamination presenting the most significant risk to the drinking water source (See Chart 9 – Contaminant Risks for Heavy Metals, Cyanide, and Other Inorganic Chemicals in Appendix D).

Sampling on 12/21/01 indicates that arsenic was detected at 0.00578 mg/l (57% of the current MCL of 0.01 mg/l) in source waters. See Chart 9 – Contaminant Risks for Heavy Metals and Other Inorganic Chemicals in Appendix D). The MCL for arsenic has recently been lowered from 0.050 mg/l to 0.01 mg/l.

According to the EPA, "Arsenic occurs naturally in rocks and soil, water, air, and plants and animals. It can be further released into the environment through natural activities such as volcanic action, erosion of rocks, and forest fires, or through human actions. Approximately 90 percent of industrial arsenic in the U.S. is currently used as a wood preservative, but arsenic is also used in paints, dyes, metals, drugs, soaps, and semi-conductors. Agricultural applications, mining, and smelting also contribute to arsenic releases in the environment." (USEPA, 2001). It is likely that the arsenic detected is from natural sources.
Studies have linked long-term exposure to arsenic in drinking water to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate. Non-cancer effects of ingesting arsenic include cardiovascular, Pulmonary, immunological, neurological, and endocrine (e.g., diabetes) effects. Short-term exposure to high doses of arsenic can cause other adverse health effects, but such effects are unlikely to occur from U.S. public water supplies that are in compliance with the previous arsenic standard of 0.050 mg/l. (USEPA, 2001).

In addition, barium and chromium have been detected at very low levels.

Barium is a lustrous, machinable metal, which exists in nature in ores containing mixtures of elements. It is used in making a wide variety of electronic components, in metal alloys, bleaches, dyes, fireworks, ceramics and glass. In particular, it is used in well drilling operations where it is directly released into the ground (USEPA, 2002). It is suspected that the levels of barium detected are from natural sources.

Chromium is a metal found in natural deposits as ores containing other elements. The greatest use of chromium is in metal alloys such as stainless steel; protective coatings on metal; magnetic tapes; and pigments for paints, cement, paper, rubber, composition floor covering and other materials. Its soluble forms are used in wood preservatives (USEPA, 2002).

Combining the contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to heavy metals and other inorganic chemical contamination of high.

Synthetic Organic Chemicals
The contaminant risk for synthetic organic chemicals is very high with residential areas, nurseries and golf courses presenting the most significant risk. (See Chart 11 – Contaminant Risks for Synthetic Organic Chemicals in Appendix D, respectively).
Sampling of synthetic organic chemicals has not occurred. After combining the contaminant risk with the natural susceptibility of the wells, the overall vulnerability to synthetic organic chemicals is medium.

Other Organic Chemicals
The contaminant risk for other organic chemicals is medium sewer lines, motor vehicle dealerships presenting the most significant risk.
Sampling of other organic chemicals has not occurred. After combining the contaminant risk with the natural susceptibility of the wells, the overall vulnerability to other organic chemicals is low. (See Chart 13 – Contaminant Risks for Other Organic Chemicals in Appendix D, respectively).

SUMMARY

A *Source Water Assessment* has been completed for the source of public drinking water serving Totem Trailer Court Well No. 4. Overall, Totem Trailer Court Well No.4 received a vulnerability rating of **Low** for nitrates/nitrites, bacteria/viruses and synthetic organic chemicals, **Medium** for other organic chemicals, **High** for volatile organic chemicals and inorganic chemicals. This assessment of contaminant risks can be used as a foundation for local voluntary protection efforts as well as a basis for the continuous efforts on the part of Totem Trailer to protect public health. It is anticipated that *Source Water Assessments* will be updated every five years to reflect any changes in the vulnerability and/or susceptibility of Totem Trailer Court public drinking water sources.

REFERENCES

Barnwell, W.W., George, R.S., Dearborn, L.L., Weeks, J.B., and Zenone, C., 1972, Water for Anchorage: an atlas of the water resources of the Anchorage area, Alaska: U.S. Geological Survey Open-File Report, 76 p.

Patrick, L.D., Brabets, T.P., and Glass, R.L., 1989, Simulation of ground-water flow at Anchorage, Alaska: U.S. Geological Survey Water-Resources Investigations Report 88-4139, 41p.

Ulery, C.A. and Updike, R.G, 1983, Subsurface structure of the cohesive facies of the Bootlegger Cove Formation, Southwest Anchorage, Alaska: Alaska Division of Geological and Geophysical Surveys Professional Report 84, 5 p.

Wang, B., Strelakos, P.M., and Jokela, B., 2000, Nitrate Source Indicators In Groundwater of the Scimitar Subdivision, Peters Creek Area, Anchorage Alaska: U.S. Geological Survey Water-Resources Investigations Report 00-4137, 25p.

Western Regional Climate Center, 2000, August 24, Web extension to the *Western Regional Climate Center* [WWW document]. URL http://www.wrcc.dri.edu/index.html

U.S. Environmental Protection Agency, 2001, Office of Water. Retrieved August 2002. [WWW document]. URL http://www.epa.gov/safewater/hfacts.html#Inorganic

U.S. Environmental Protection Agency, 2001, Office of Water, National Primary Drinking Water Regulations, Consumer Factsheet on Arsenic. Retrieved August 2002. [WWW document]. URL http://www.epa.gov/safewater/ars/ars_rule_factsheet.html

U.S. Environmental Protection Agency, 2001, Office of Water, National Primary Drinking Water Regulations, Consumer Factsheet on Barium. Retrieved August 2002. [WWW document]. URL http://www.epa.gov/safewater/dwh/c-ioc/barium.html

U.S. Environmental Protection Agency, 2001. Office of Water, National Primary Drinking Water Regulations, Consumer Factsheet on Chromium. Retrieved February 2002. [WWW document]. URL http://www.epa.gov/safewater/dwh/c-ioc/chromium.html

APPENDIX A

Totem Trailer Court Well No.4
Drinking Water Protection Area Location Map
(Map 1)

Drinking Water Protection Area for Totem Trailer Court Well No. 4

Legend

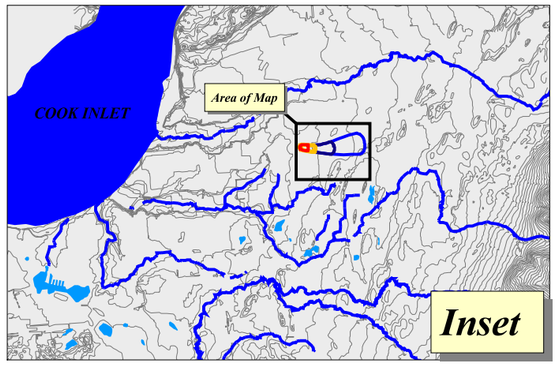
- Public Water System

Zone A Protection Area
- Several Months Travel Time

Zone B Protection Area
- Less then 2 Years Travel Time

Zone C Protection Area
- Less than 5 Years Travel Time

Zone D Protection Area
- Less then 10 Years Travel Time
- Roads
- Streams
- Lakes
- Cook Inlet
- Elevation Contours



N
W E
S

1000 0 1000 Feet

PWSID 210574.002 (Well No. 4)

Map 1

APPENDIX B

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Well No.4 (Tables 1-7)

Table 1

Contaminant Source Inventory for ***Totem Trailer Court***

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	2	
Residential Areas	R01	R1-1	A	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	2	

Table 2

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Sources of Bacteria and Viruses

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Medium	2	
Residential Areas	R01	R1-1	A	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	2	

Table 2 (continued)

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Sources of Bacteria and Viruses

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	Low	2	
Medical/veterinary facilities (doctor or dentist offices, hospitals, nursing homes)	X40	X40-1	A	Medium	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Medium	2	
Residential Areas	R01	R1-2	B	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20		C	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Medium	3	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	Low	4	

Table 3

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Sources of Nitrates/Nitrites

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Medium	2	
Residential Areas	R01	R1-1	A	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Medium	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Medium	2	
Residential Areas	R01	R1-2	B	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20		C	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Medium	3	
Orchards or nurseries	A10	A10-1	C	Medium	3	
Hardware stores	C17	C17-1	C	Low	3	
Residential Areas	R01	R1-3	C	Low	3	
Golf courses	X02	X2-1	C	Medium	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Municipal or city parks (with green areas)	X04	X4-1	C	Medium	3	
Dog walking areas/foot trails	X46	X46-1	C	Low	3	
Dog walking areas/foot trails	X46	X46-2	C	Low	3	
Dog walking areas/foot trails	X46	X46-3	C	Low	3	

Table 4

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Sources of Volatile Organic Chemicals

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Low	2	
Residential Areas	R01	R1-1	A	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	Low	2	
Medical/veterinary facilities (doctor or dentist offices, hospitals, nursing homes)	X40	X40-1	A	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Low	2	
Residential Areas	R01	R1-2	B	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Low	3	
Highways and roads, paved (cement or asphalt)	X20		C	Low	3	
Orchards or nurseries	A10	A10-1	C	Low	3	
Hardware stores	C17	C17-1	C	Low	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Motor vehicle dealerships - cars, trucks, motor cycles, ATV's, snow machines, boats (with service department)	C27	C27-1	C	Medium	3	
Photography supplies/photo processing laboratories	C36	C36-1	C	Medium	3	
Construction trade areas and materials	C09	C9-1	C	Low	3	
Residential Areas	R01	R1-3	C	Low	3	
Closed tanks, diesel (underground)	T09	T9-1	C	Medium	3	
Closed tanks, diesel (underground)	T09	T9-2	C	Medium	3	
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U4-1	C	High	3	File No. CS100.228 Leaking hydraulic lift piping resulted in contaminated soils and probable groundwater contamination.
Gasoline stations (without repair shop)	C15	C15-1	D	High	4	
Gasoline stations (without repair shop)	C15	C15-2	D	High	4	
Gasoline stations (without repair shop)	C15	C15-3	D	High	4	
Gasoline stations (without repair shop)	C15	C15-4	D	High	4	
Gasoline stations (with repair shop)	C16	C16-1	D	High	4	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	High	4	
Tanks, gasoline (underground)	T12	T12-1	D	High	4	
Tanks, gasoline (underground)	T12	T12-2	D	High	4	
Tanks, gasoline (underground)	T12	T12-3	D	High	4	
Tanks, gasoline (underground)	T12	T12-4	D	High	4	
Tanks, gasoline (underground)	T12	T12-5	D	High	4	
Tanks, gasoline (underground)	T12	T12-6	D	High	4	
Tanks, gasoline (underground)	T12	T12-7	D	High	4	
Tanks, gasoline (underground)	T12	T12-8	D	High	4	
Tanks, diesel (underground)	T08	T8-1	D	High	4	

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court

Sources of Volatile Organic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Tanks, diesel (underground)	T08	T8-2	D	High	4	
Tanks, diesel (underground)	T08	T8-3	D	High	4	
Tanks, diesel (underground)	T08	T8-4	D	High	4	
Tanks, diesel (underground)	T08	T8-5	D	High	4	
Tanks, diesel (underground)	T08	T8-6	D	High	4	
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U4-3	D	High	4	6003 Miley Drive. File No. CS96.56. Soil and groundwater contamination due to home heating oil tank release.
Closed Leaking Underground Fuel Storage Tank (LUST) Sites	U08	U8-1	D	Low	4	5700 Debarr Fiel No. L25.14 Petroleum contamination of soil. Clean up completed11/3/92.

Table 5

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Low	2	
Residential Areas	R01	R1-1	A	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	2	

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	Low	2	
Medical/veterinary facilities (doctor or dentist offices, hospitals, nursing homes)	X40	X40-1	A	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Low	2	
Residential Areas	R01	R1-2	B	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Low	3	
Highways and roads, paved (cement or asphalt)	X20		C	Low	3	
Hardware stores	C17	C17-1	C	Low	3	

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Motor vehicle dealerships - cars, trucks, motor cycles, ATV's, snow machines, boats (with service department)	C27	C27-1	C	Low	3	
Photography supplies/photo processing laboratories	C36	C36-1	C	Medium	3	
Construction trade areas and materials	C09	C9-1	C	Low	3	
Residential Areas	R01	R1-3	C	Low	3	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	High	4	
Recycling and waste reduction facilities	D57	D57-1	D	High	4	
Tanks, lubricants or other petroleum products (underground)	T20	T20-1	D	Medium	4	

Table 6

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court Sources of Synthetic Organic Chemicals

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Low	2	
Residential Areas	R01	R1-1	A	Low	3	
Medical/veterinary facilities (doctor or dentist offices, hospitals, nursing homes)	X40	X40-1	A	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Low	2	

Table 6 (continued)

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court

Sources of Synthetic Organic Chemicals

PWSID 210574.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Residential Areas	R01	R1-2	B	Low	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Low	3	
Orchards or nurseries	A10	A10-1	C	High	3	
Photography supplies/photo processing laboratories	C36	C36-1	C	Low	3	
Residential Areas	R01	R1-3	C	Low	3	
Golf courses	X02	X2-1	C	High	3	
Municipal or city parks (with green areas)	X04	X4-1	C	Low	3	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	Low	4	

Table 7

Contaminant Source Inventory and Risk Ranking for Totem Trailer Court
Sources of Other Organic Chemicals

PWSID 210574.001

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-1	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-10	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-11	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-12	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-13	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-2	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-3	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-5	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-6	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-7	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-8	A	Low	2	
Residential Areas	R01	R1-1	A	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	Low	2	
Residential Areas	R01	R1-2	B	Low	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	Low	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	Low	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	Low	3	
Highways and roads, paved (cement or asphalt)	X20		C	Low	3	
Orchards or nurseries	A10	A10-1	C	Low	3	
Hardware stores	C17	C17-1	C	Low	3	
Motor vehicle dealerships - cars, trucks, motor cycles, ATV's, snow machines, boats (with service department)	C27	C27-1	C	Medium	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Photography supplies/photo processing laboratories	C36	C36-1	C	Low	3	
Construction trade areas and materials	C09	C9-1	C	Low	3	
Residential Areas	R01	R1-3	C	Low	3	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	Medium	4	
Asphalt and tar processing/storage	I03	I3-1	D	High	4	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	A	2	
Medical/veterinary facilities (doctor or dentist offices, hospitals, nursing homes)	X40	X40-1	A	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-14	B	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-15	B	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D1-9	B	2	
Residential Areas	R01	R1-2	B	3	
Highways and roads, paved (cement or asphalt)	X20	X20-16	B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-18	B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	B	2	
Orchards or nurseries	A10	A10-1	C	3	
Construction trade areas and materials	C09	C9-1	C	3	
Hardware stores	C17	C17-1	C	3	
Motor vehicle dealerships - cars, trucks, motor cycles, ATV's, snow machines, boats (with service department)	C27	C27-1	C	3	
Photography supplies/photo processing laboratories	C36	C36-1	C	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01		C	3	
Residential Areas	R01	R1-3	C	3	
Closed tanks, diesel (underground)	T09	T9-1	C	3	

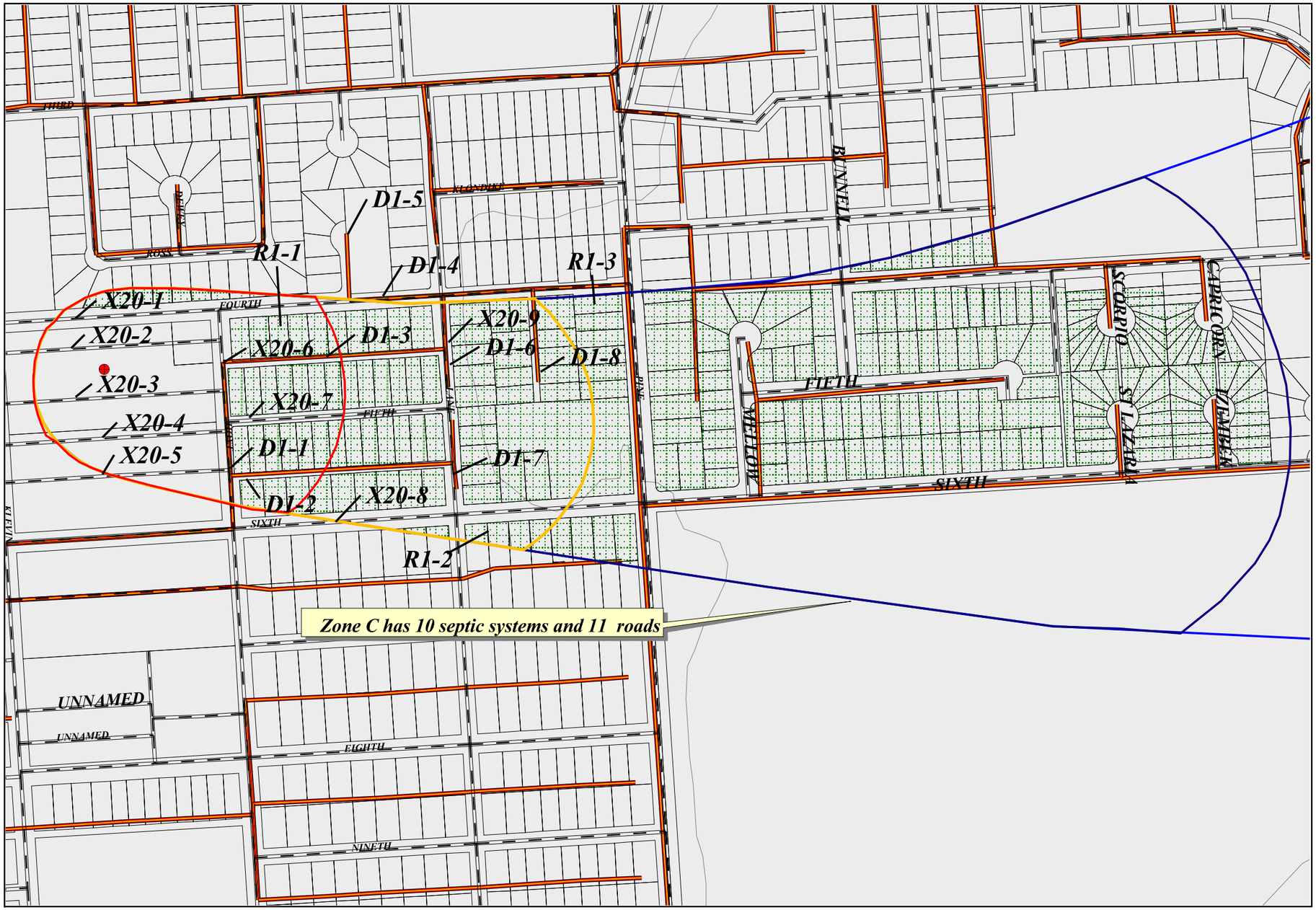
Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Closed tanks, diesel (underground)	T09	T9-2	C	3	
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U4-1	C	3	File No. CS100.228 Leaking hydraulic lift piping resulted in contaminated soils and probable groundwater contamination.
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-1	C	3	File No. L55.99 Oil water seperator. Monitoring wells in place.
Golf courses	X02	X2-1	C	3	
Municipal or city parks (with green areas)	X04	X4-1	C	3	
Highways and roads, paved (cement or asphalt)	X20		C	3	
Dog walking areas/foot trails	X46	X46-1	C	3	
Dog walking areas/foot trails	X46	X46-2	C	3	
Dog walking areas/foot trails	X46	X46-3	C	3	
Gasoline stations (without repair shop)	C15	C15-1	D	4	
Gasoline stations (without repair shop)	C15	C15-2	D	4	
Gasoline stations (without repair shop)	C15	C15-3	D	4	
Gasoline stations (without repair shop)	C15	C15-4	D	4	
Gasoline stations (with repair shop)	C16	C16-1	D	4	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D2-1	D	4	
Recycling and waste reduction facilities	D57	D57-1	D	4	
Asphalt and tar processing/storage	I03	I3-1	D	4	
Tanks, diesel (underground)	T08	T8-1	D	4	
Tanks, diesel (underground)	T08	T8-2	D	4	
Tanks, diesel (underground)	T08	T8-3	D	4	
Tanks, diesel (underground)	T08	T8-4	D	4	
Tanks, diesel (underground)	T08	T8-5	D	4	
Tanks, diesel (underground)	T08	T8-6	D	4	
Tanks, gasoline (underground)	T12	T12-1	D	4	
Tanks, gasoline (underground)	T12	T12-2	D	4	
Tanks, gasoline (underground)	T12	T12-3	D	4	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Tanks, gasoline (underground)	T12	T12-4	D	4	
Tanks, gasoline (underground)	T12	T12-5	D	4	
Tanks, gasoline (underground)	T12	T12-6	D	4	
Tanks, gasoline (underground)	T12	T12-7	D	4	
Tanks, gasoline (underground)	T12	T12-8	D	4	
Tanks, lubricants or other petroleum products (underground)	T20	T20-1	D	4	
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U4-3	D	4	6003 Miley Drive. File No. CS96.56. Soil and groundwater contamination due to home heating oil tank release.
Closed Leaking Underground Fuel Storage Tank (LUST) Sites	U08	U8-1	D	4	5700 Debarr Fiel No. L25.14 Petroleum contamination of soil. Clean up completed11/3/92.

APPENDIX C

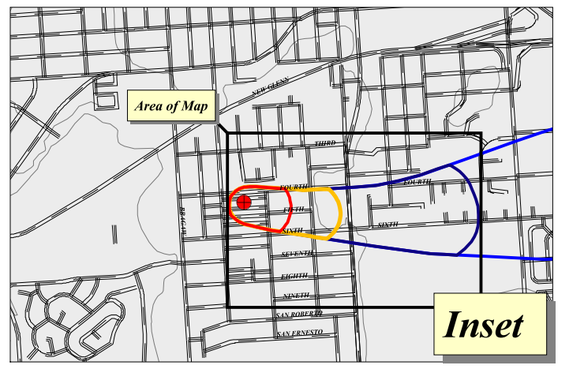
Totem Trailer Court Well No.4
Drinking Water Protection Area
and Potential and Existing Contaminant Sources
(Maps 2 - 4)

Drinking Water Protection Area for Totem Trailer Court and Potential and Existing Sources of Contamination



Legend

- Public Water System
- Zone A Protection Area
  - Several Months Travel Time
- Zone B Protection Area
  - Less then 2 Years Travel Time
- Zone C Protection Area
  - Less than 5 Years Travel Time
- Zone D Protection Area
  - Less then 10 Years Travel Time
- Residential (R1)
- Roads
- Sewers (D1)
- MOA Land Parcels
- Streams
- Lakes
- Elevation Contours



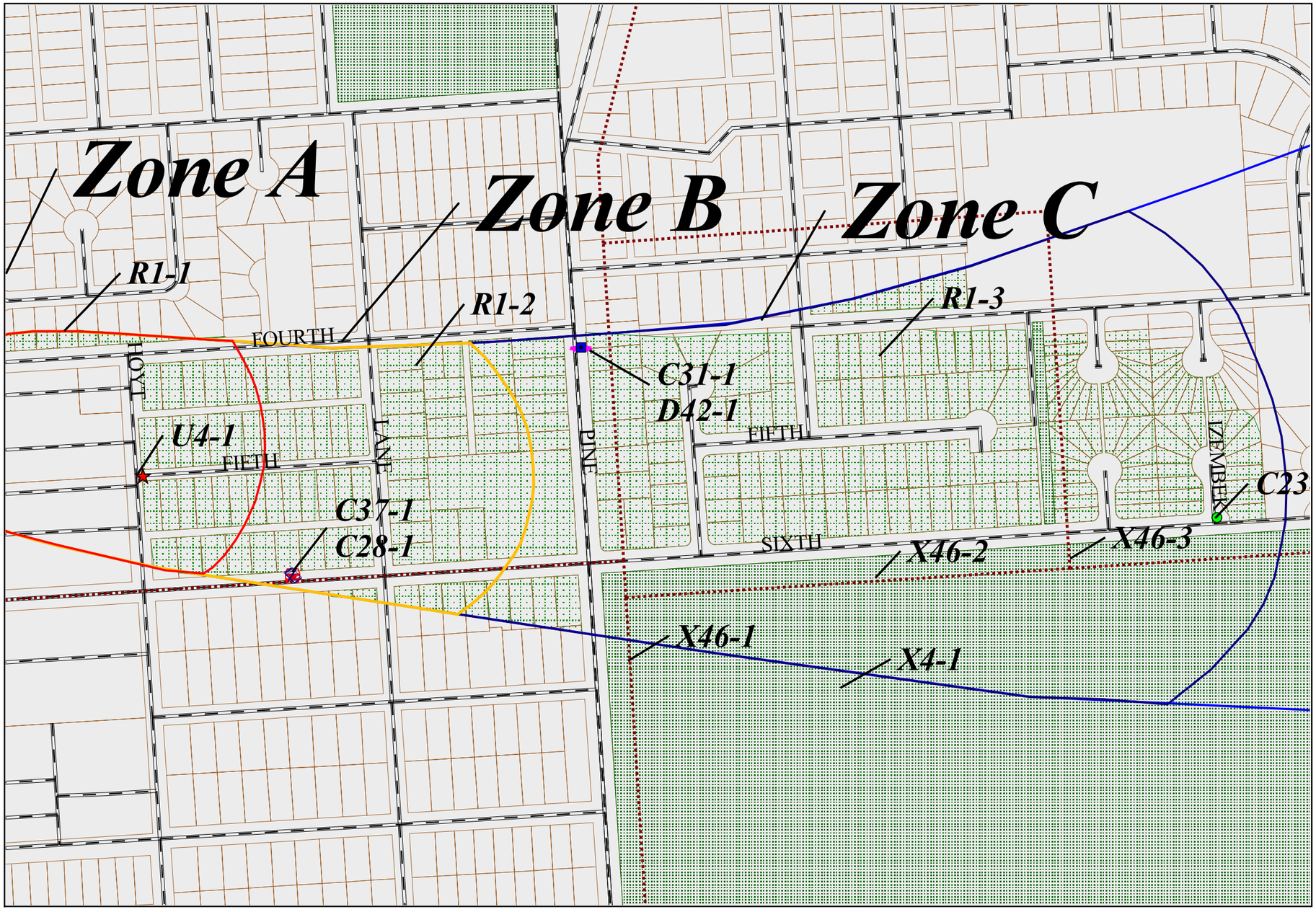
N
W E
S

600 0 600 Feet

PWSID 210574.002 (Well No. 4)

Map 2

Drinking Water Protection Area for Totem Trailer Court and Potential and Existing Sources of Contamination



Legend

- Public Water System

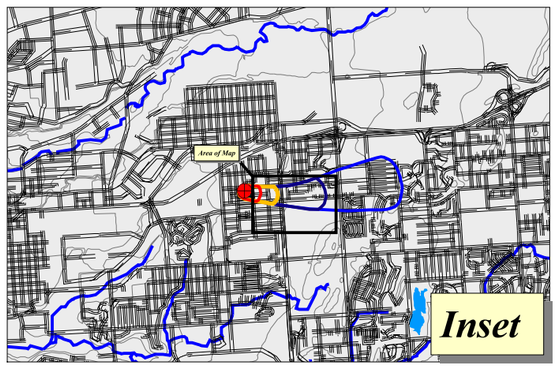
Zone A Protection Area
- Several Months Travel Time

Zone B Protection Area
- Less then 2 Years Travel Time

Zone C Protection Area
- Less than 5 Years Travel Time

Zone D Protection Area
- Less then 10 Years Travel Time

Contaminant Sources
- Lawn and garden supplies (C23)
- Motor vehicle supplies stores (C28)
- Motor vehicle repair shops (C31)
- Printers, publishers, copiers (C37)
- Injection wells (Class V) motor vehicle waste (D42)
- Contaminated site, DEC recognized (U4)
- Trails (X46)
- Roads
- Parks (X4)
- MOA Land Parcels
- Residential lawsn (R1)



N
W E
S

500 0 500 Feet

PWSID 210574.002 (Well No. 4)

Map 3

APPENDIX D

Vulnerability Analysis for
Totem Trailer Court Well No.4
(Charts 1-14)

Chart 1. Susceptibility of the wellhead - Totem Trailer Court Well No. 4

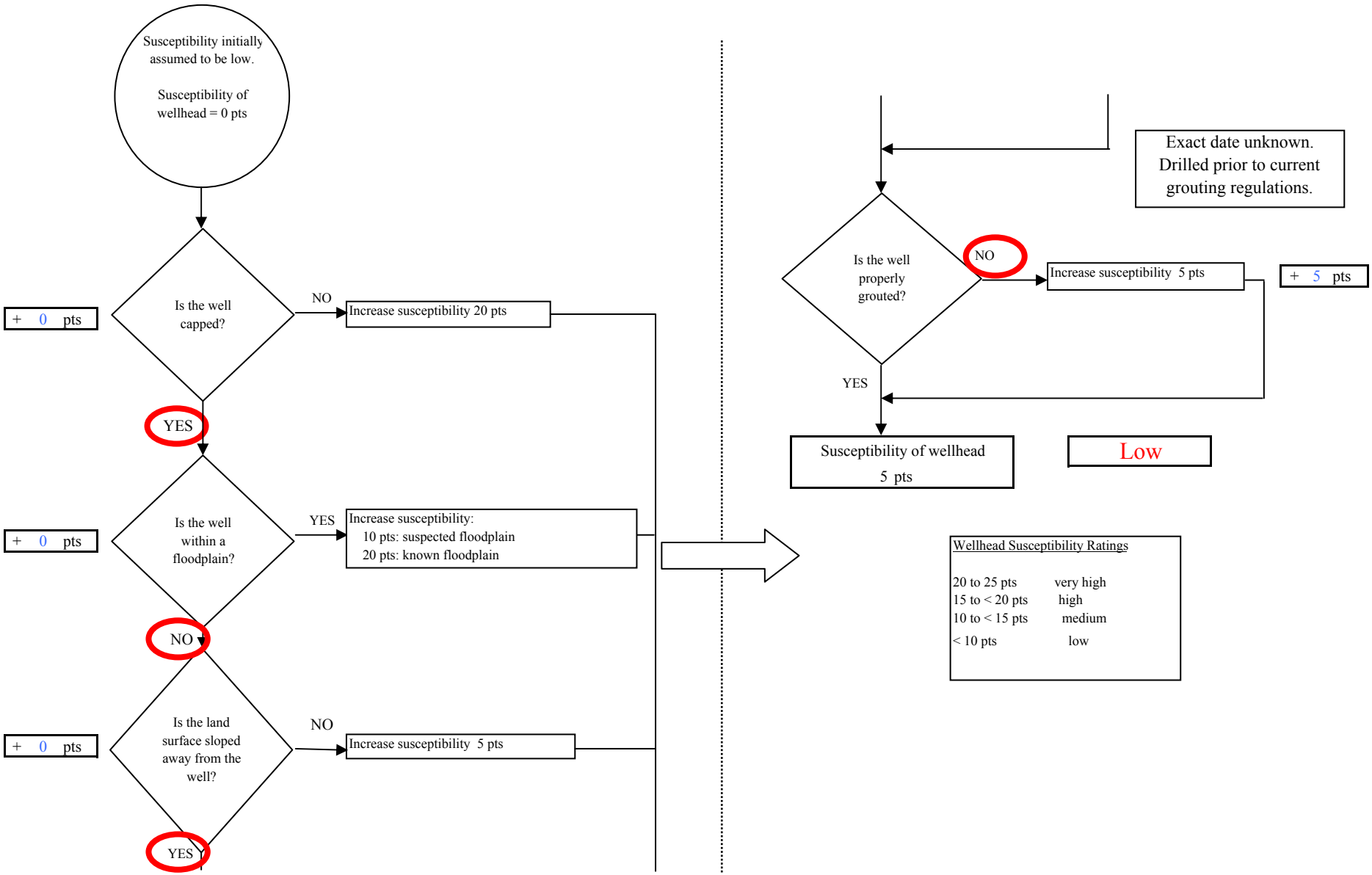


Chart 2. Susceptibility of the aquifer - Totem Trailer Court Well No. 4

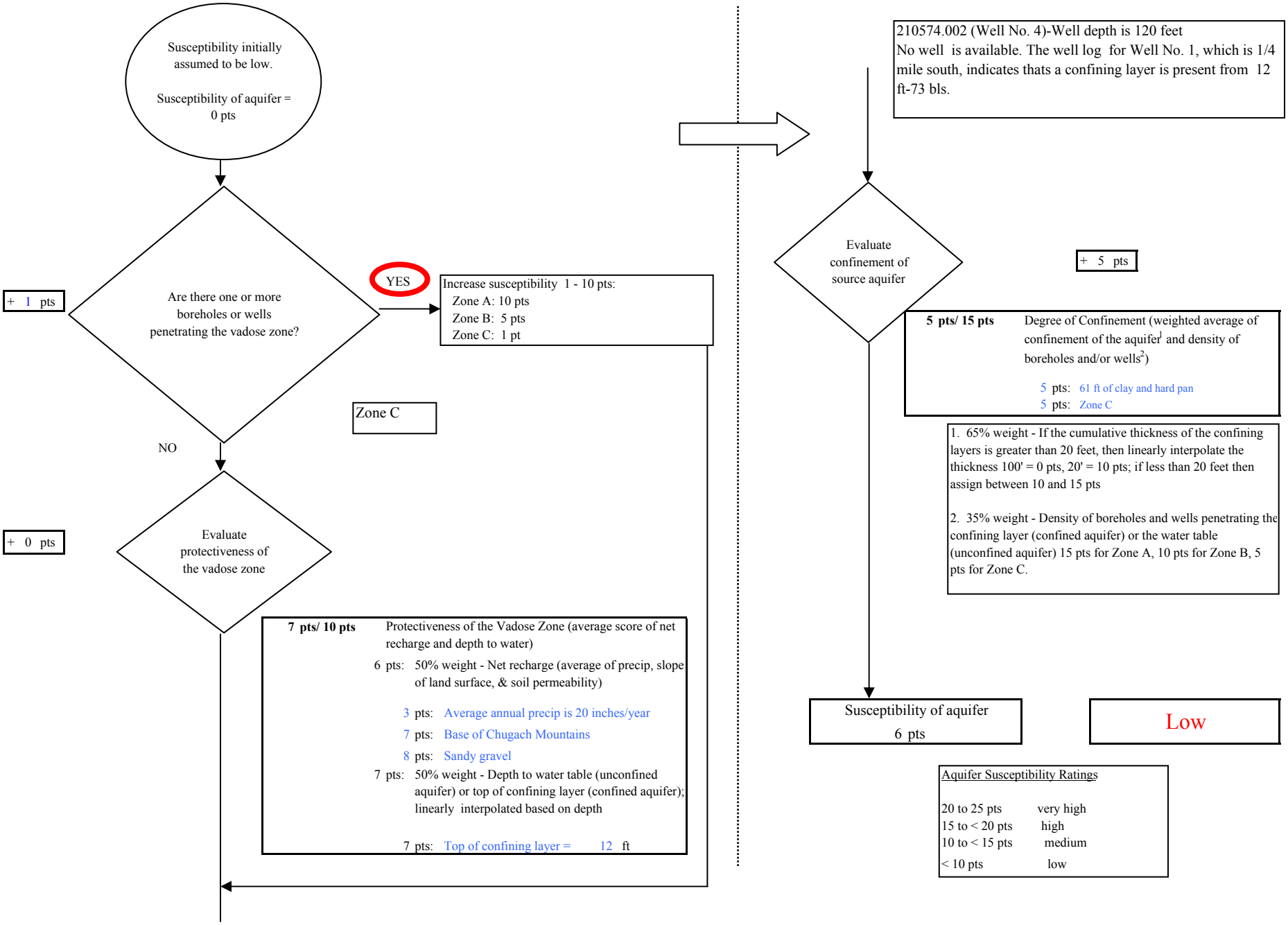
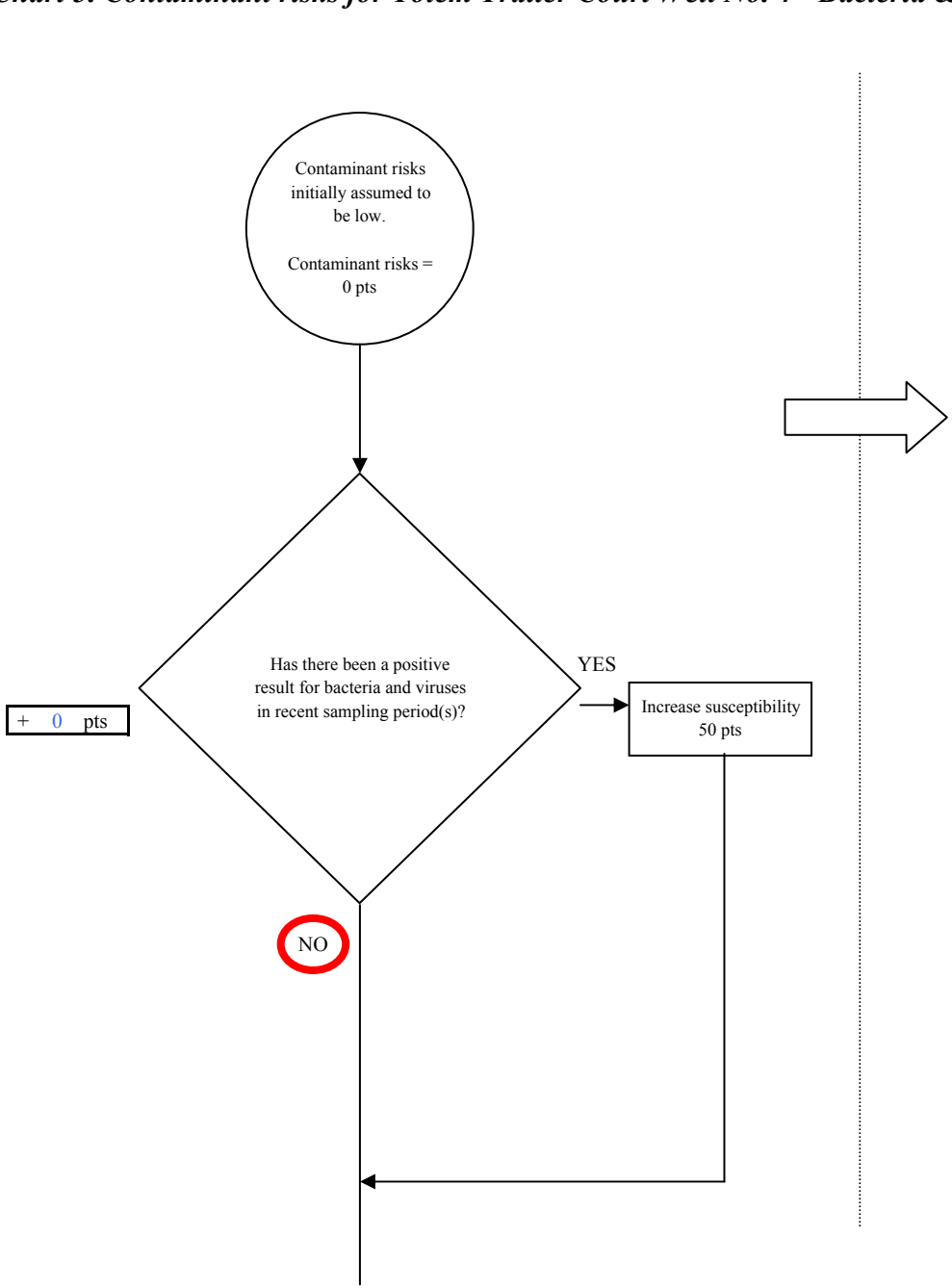
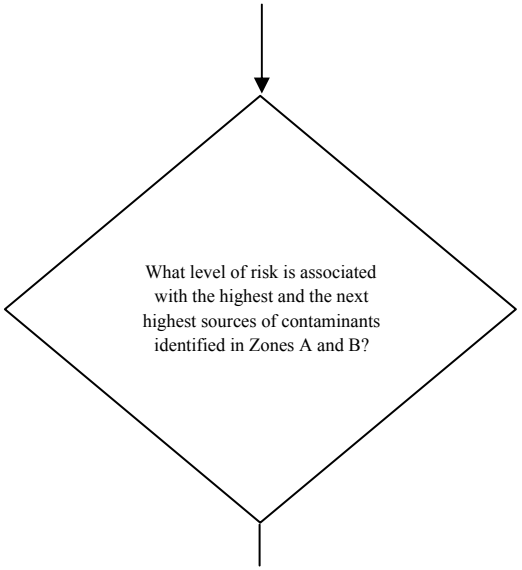


Chart 3. Contaminant risks for Totem Trailer Court Well No. 4 - Bacteria & Viruses





+ 20 pts

Risk Rankings for Contaminant Sources Identified in Zones A and B

	Zone A	Zone B	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	1	0	1
Low(s)	0	1	1

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

Chart 3. Contaminant risks for Totem Trailer Court Well No. 4 - Bacteria & Viruses

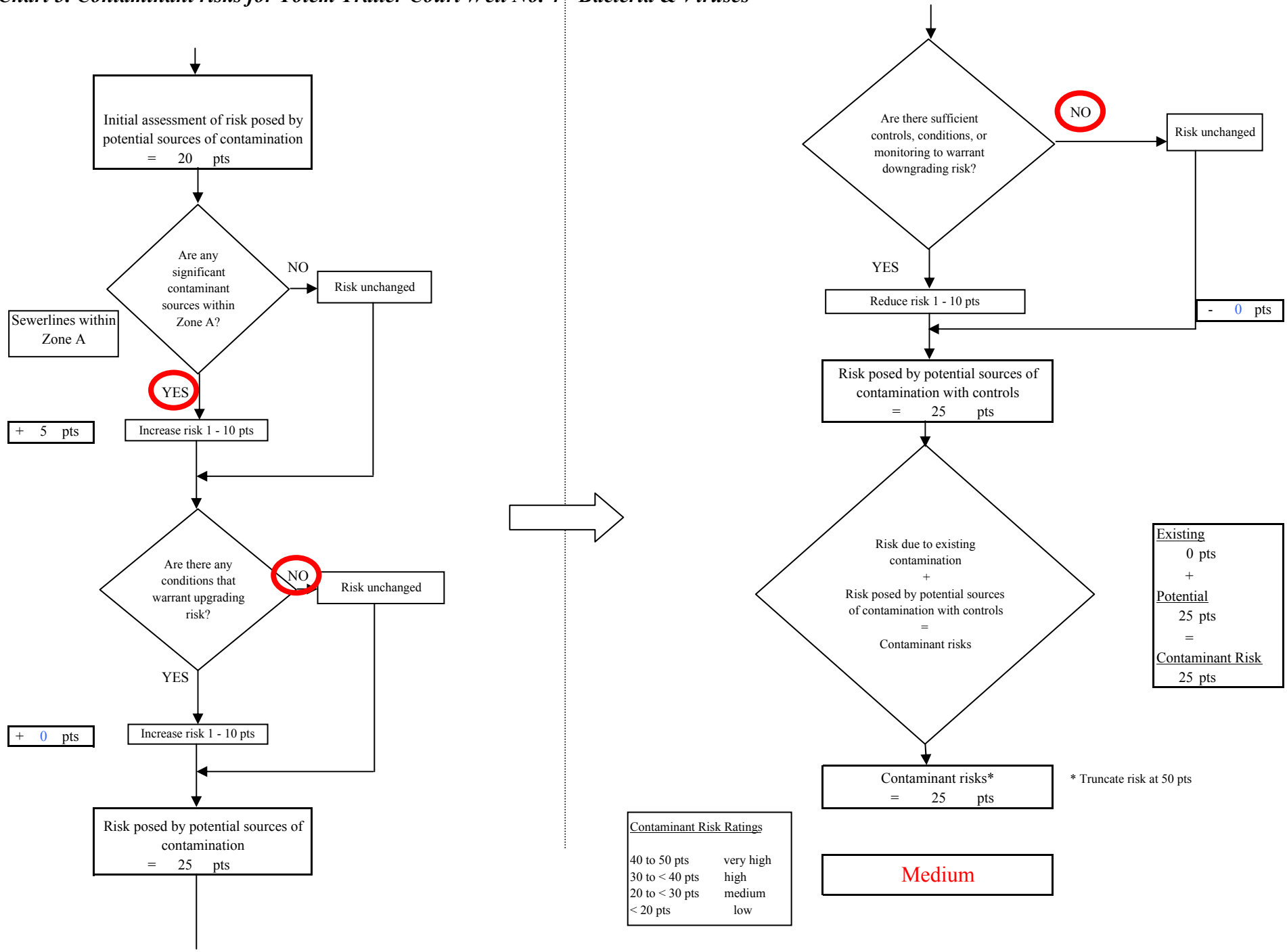


Chart 4. Vulnerability analysis for Totem Trailer Court Well No. 4 - Bacteria & Viruses

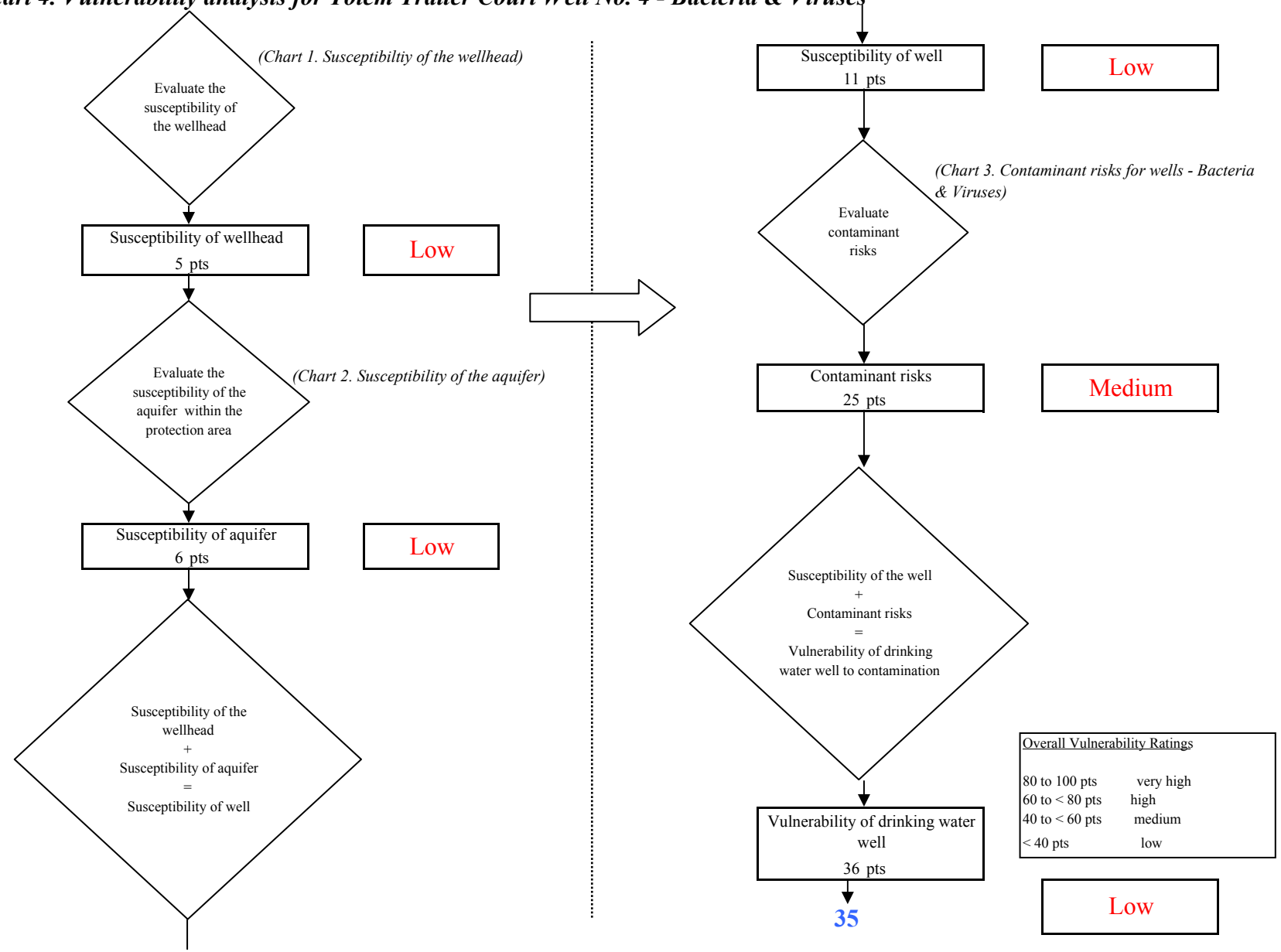


Chart 5. Contaminant risks for Totem Trailer Court Well No. 4 - Nitrates and Nitrites

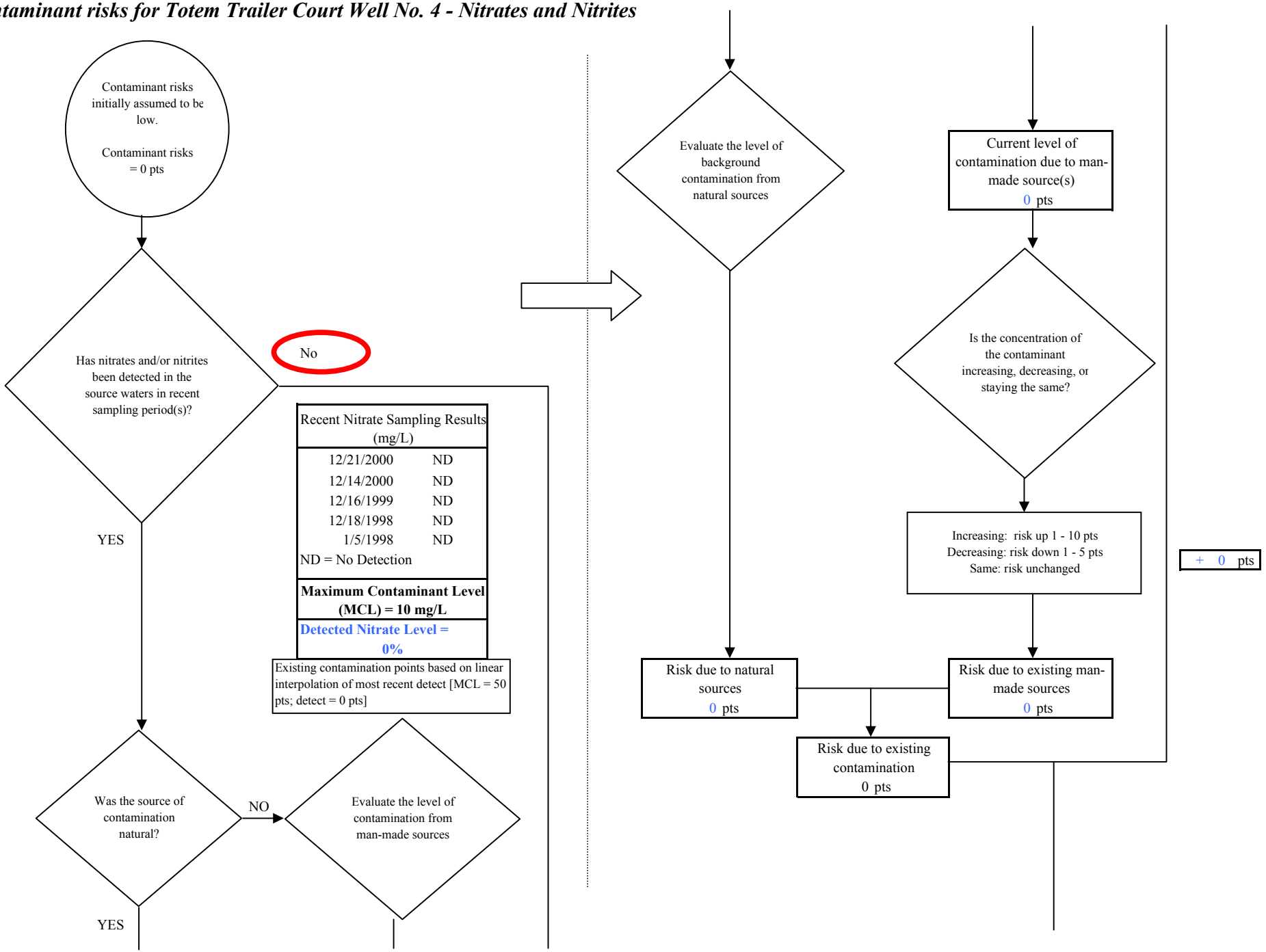


Chart 5. Contaminant risks for Totem Trailer Court Well No. 4 - Nitrates and Nitrites

+ 20 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

Risk Levels for Contaminant Sources identified in Zones A, B and C

	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	1	1	2
Low(s)	1	7	8

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

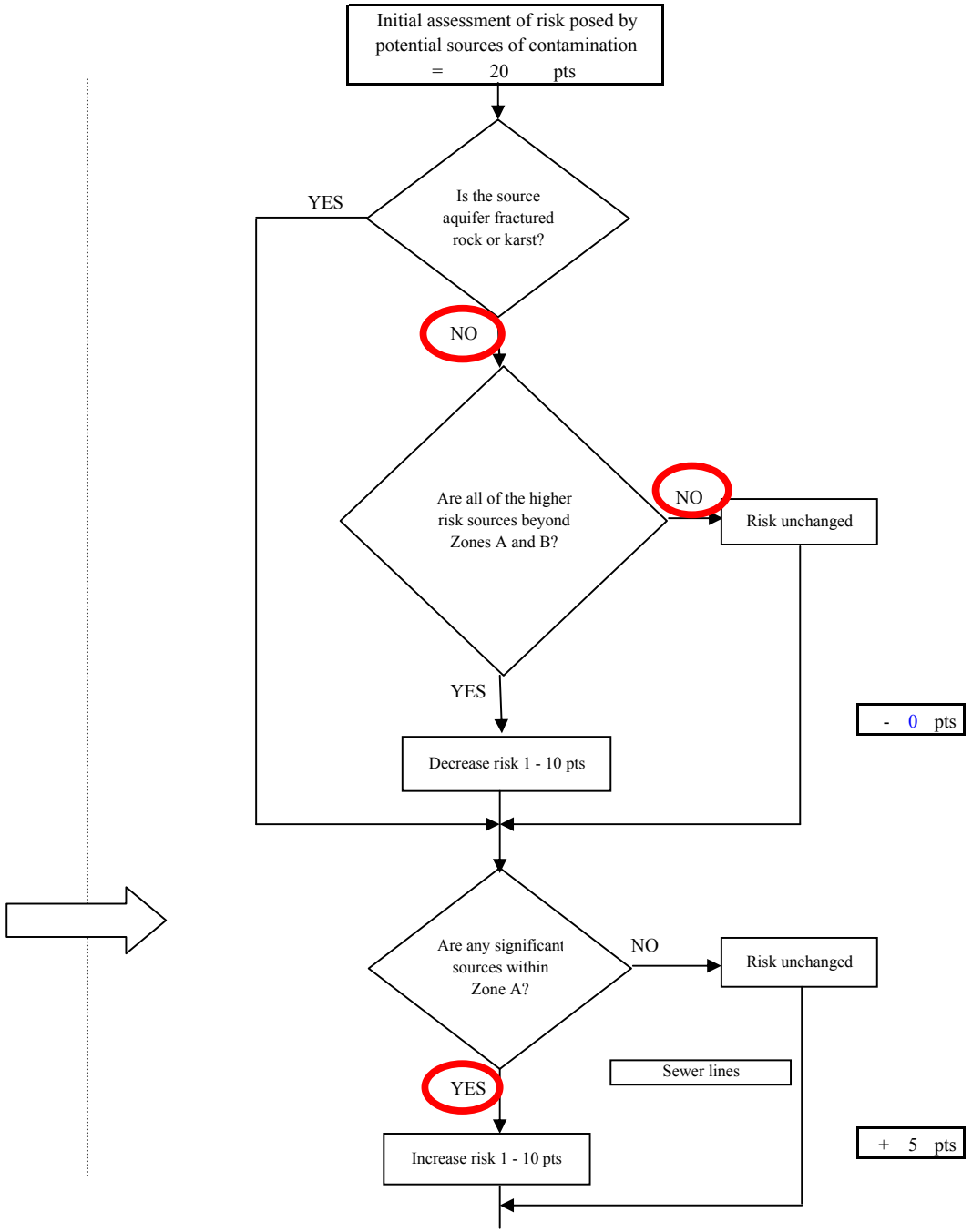


Chart 5. Contaminant risks for Totem Trailer Court Well No. 4 - Nitrates and Nitrites

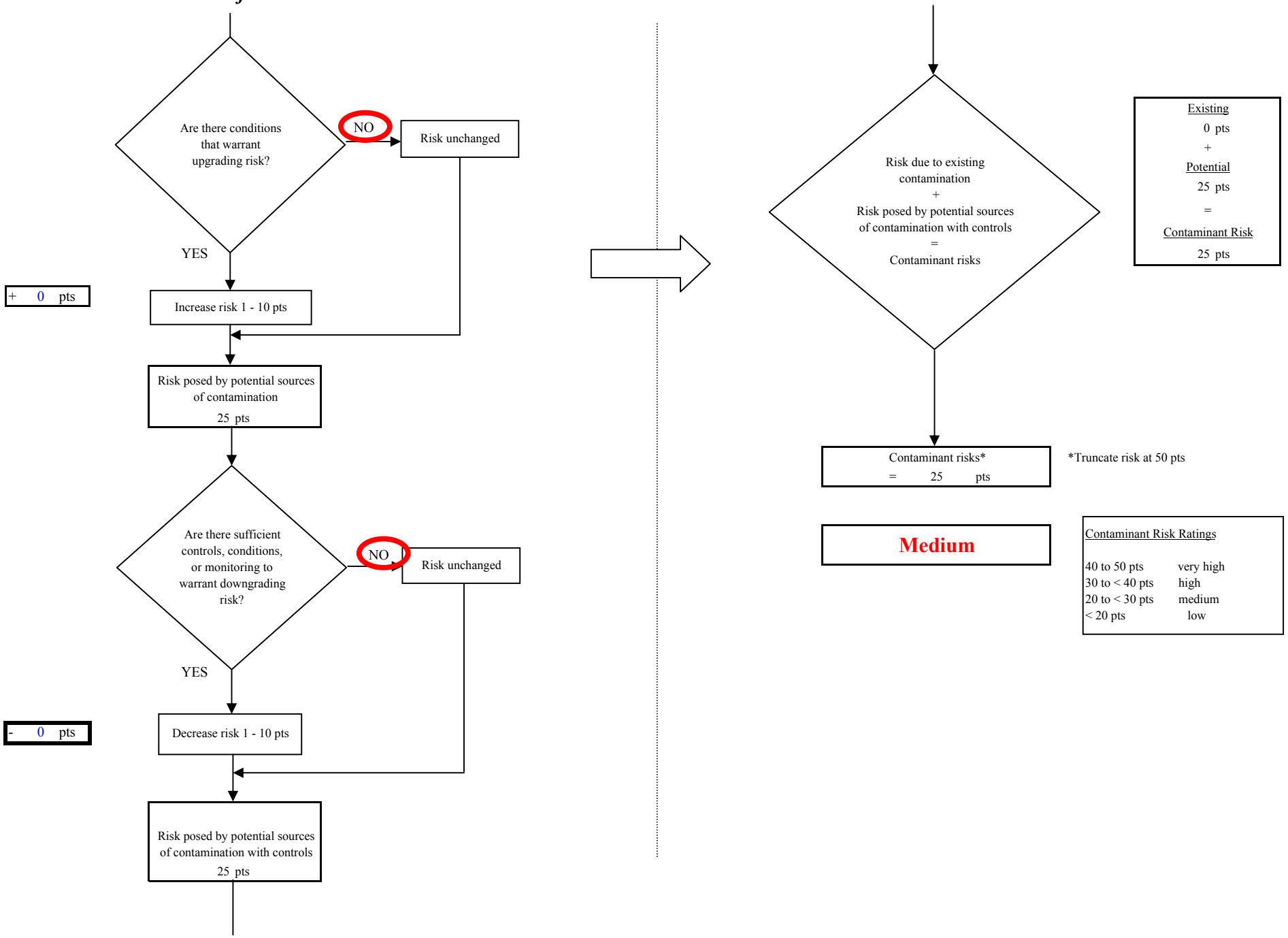


Chart 6. Vulnerability analysis for Totem Trailer Court Well No. 4 - Nitrates and Nitrites

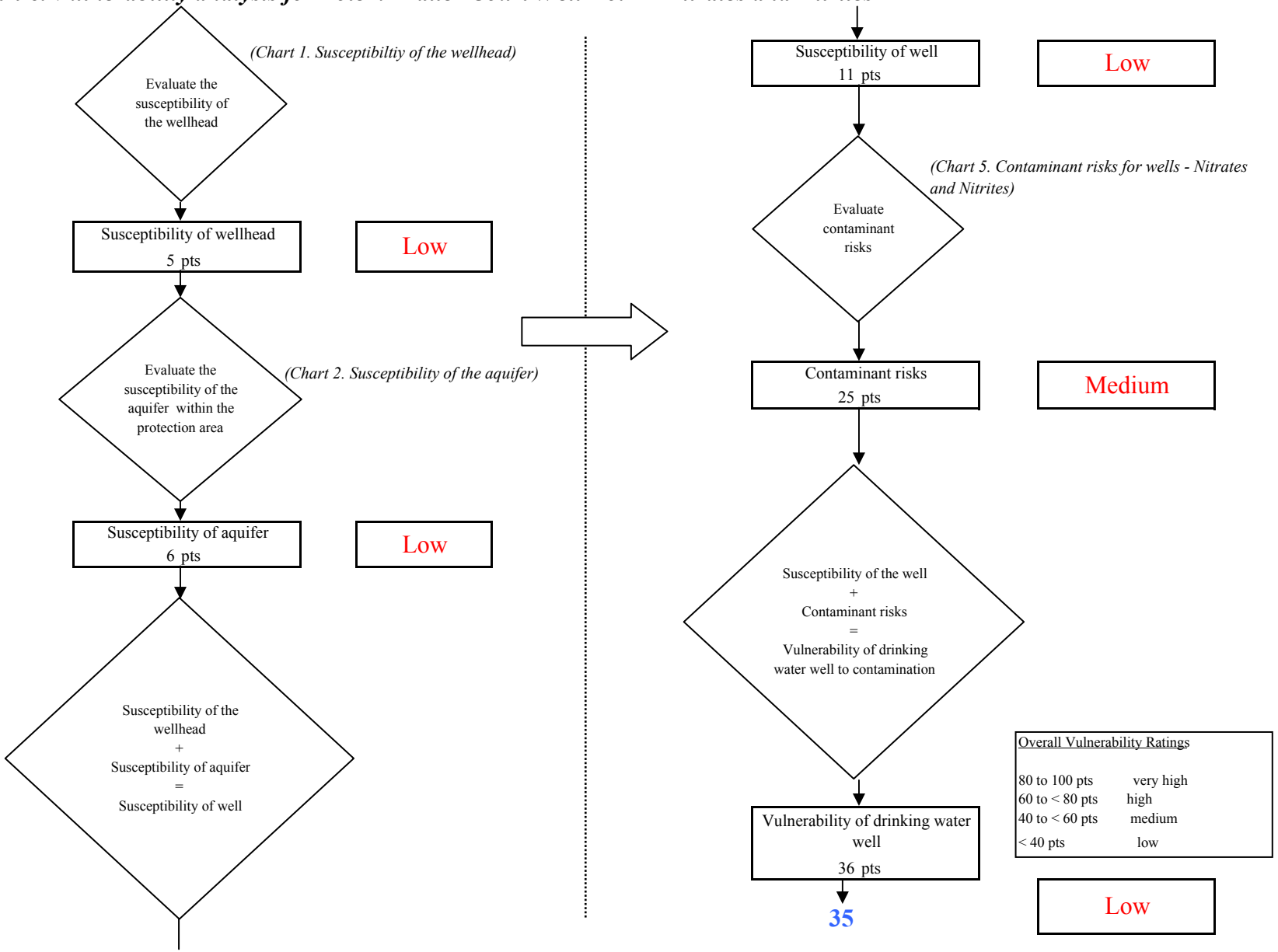


Chart 7. Contaminant risks for Totem Trailer Court Well No. 4 - Volatile Organic Chemicals

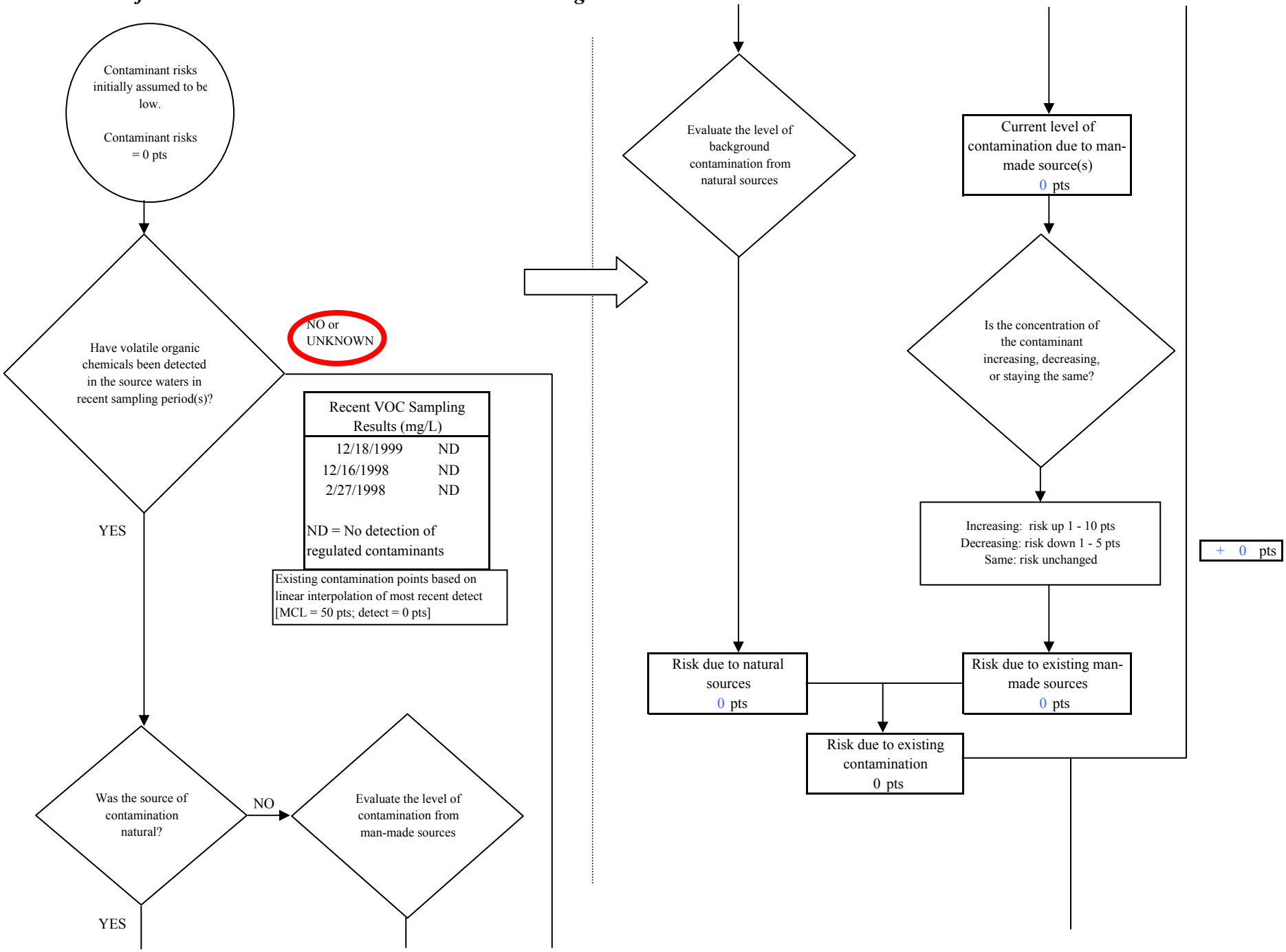


Chart 7. Contaminant risks for Totem Trailer Court Well No. 4 - Volatile Organic Chemicals

+ 40 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	1	2	3
Medium(s)	0	1	1
Low(s)	2	2	4

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 40

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

Initial assessment of risk posed by potential sources of contamination = 40 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

ADEC Recognized contaminated site.

Increase risk 1 - 10 pts

+ 10 pts

Chart 7. Contaminant risks for Totem Trailer Court Well No. 4 - Volatile Organic Chemicals

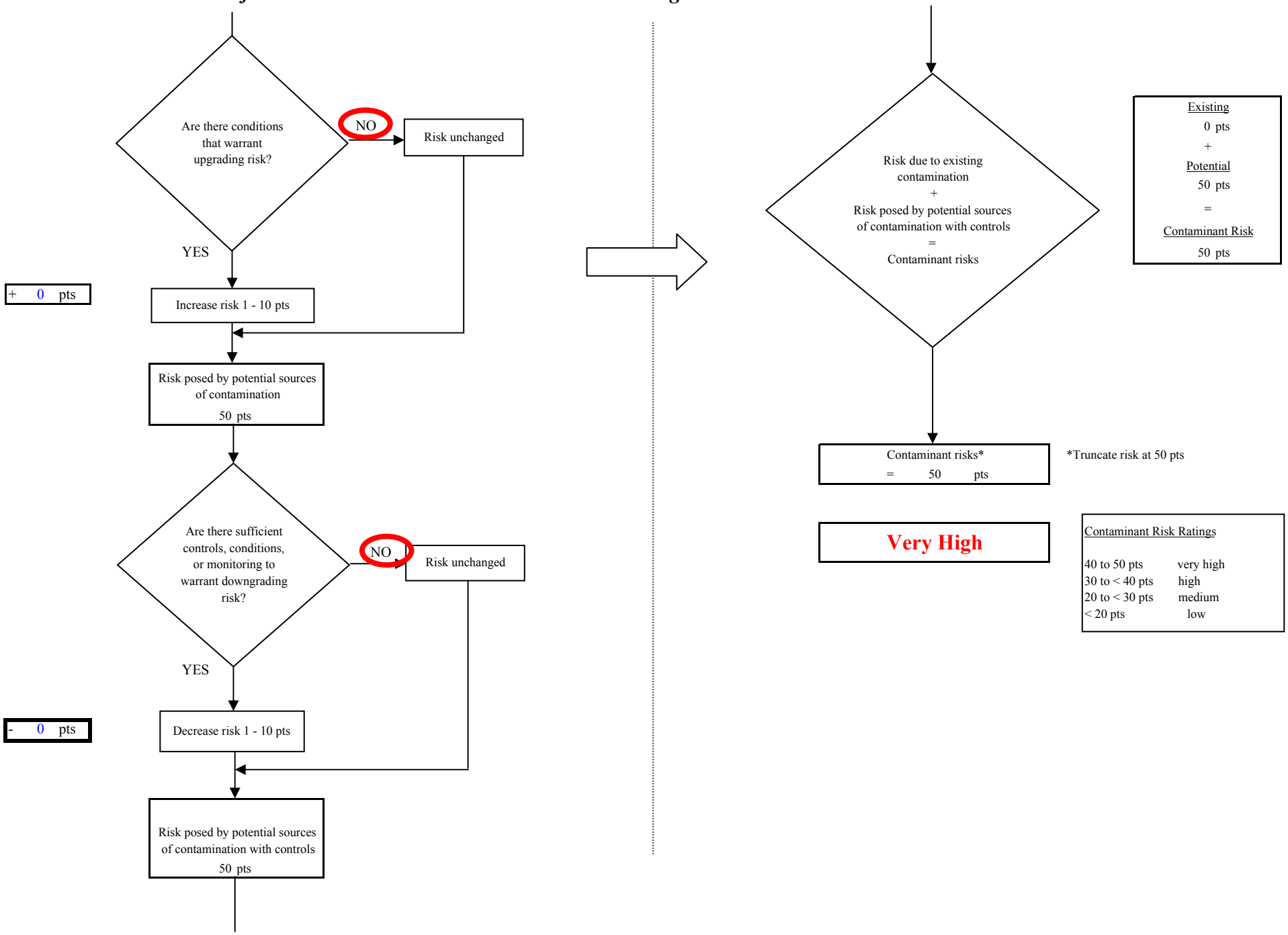


Chart 8. Vulnerability analysis for Totem Trailer Court Well No. 4 - Volatile Organic Chemicals

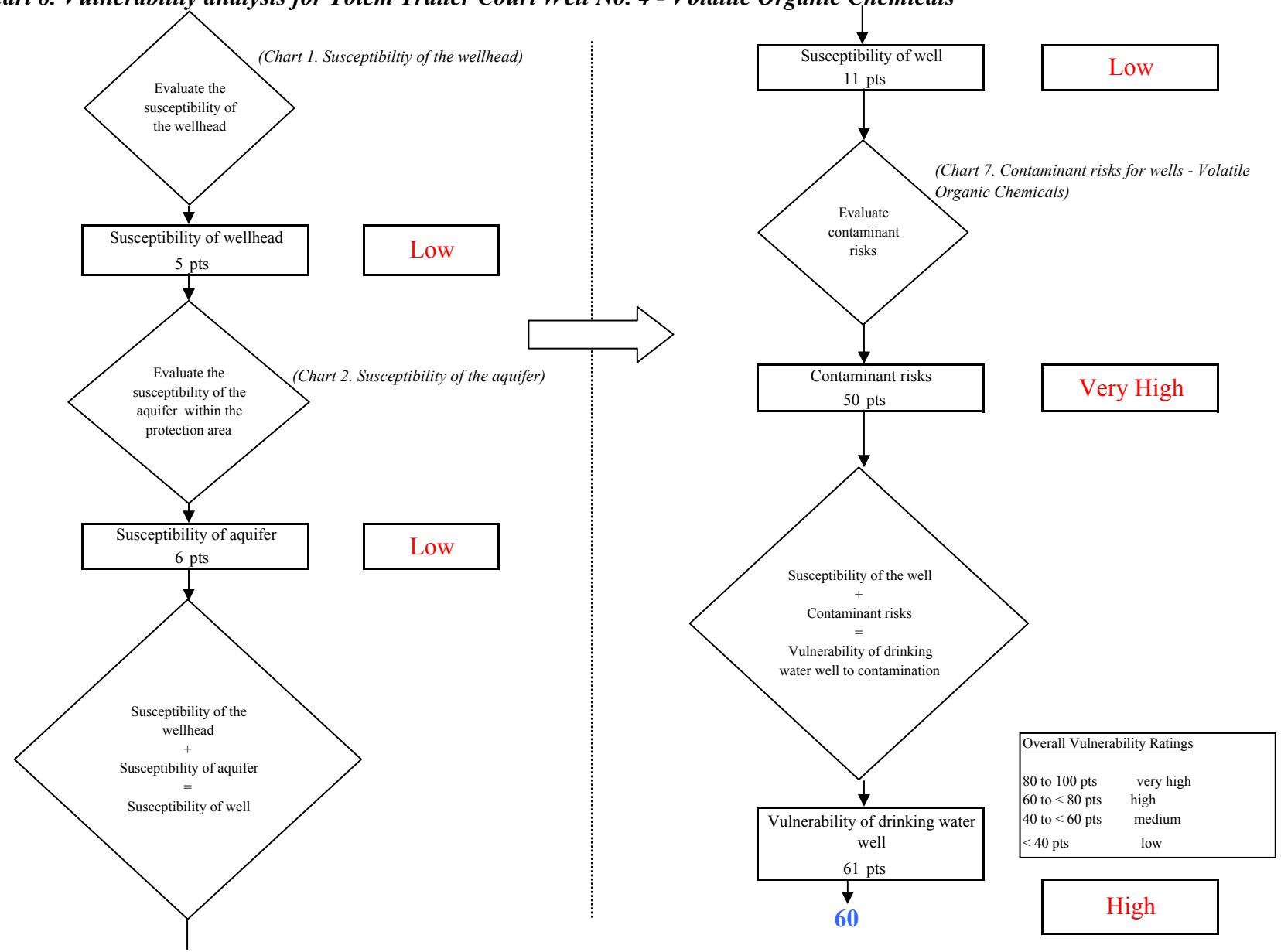


Chart 9. Contaminant risks for Totem Trailer Court Well No. 4 - Heavy Metals, Cyanide and Other Inorganic Chemicals

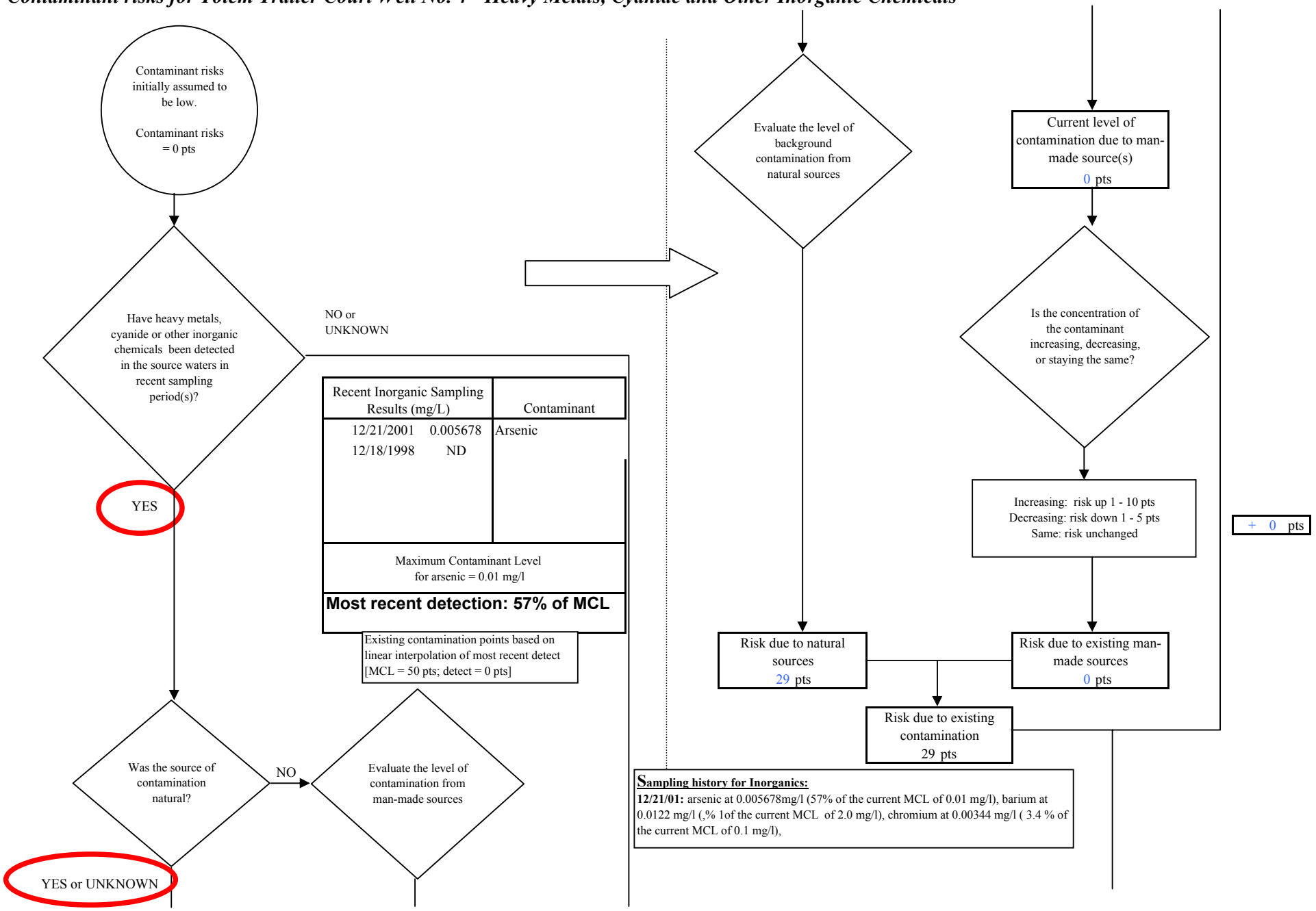


Chart 9. Contaminant risks for Totem Trailer Court Well No. 4 - Heavy Metals, Cyanide and Other Inorganic Chemicals

+ 30 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	1	1
Medium(s)	0	2	2
Low(s)	2	1	3

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 30

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

Initial assessment of risk posed by potential sources of contamination = 30 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO → Risk unchanged

YES → Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO → Risk unchanged

Sewer lines

YES → Increase risk 1 - 10 pts

+ 2 pts

Chart 9. Contaminant risks for Totem Trailer Court Well No. 4 - Heavy Metals, Cyanide and Other Inorganic Chemicals

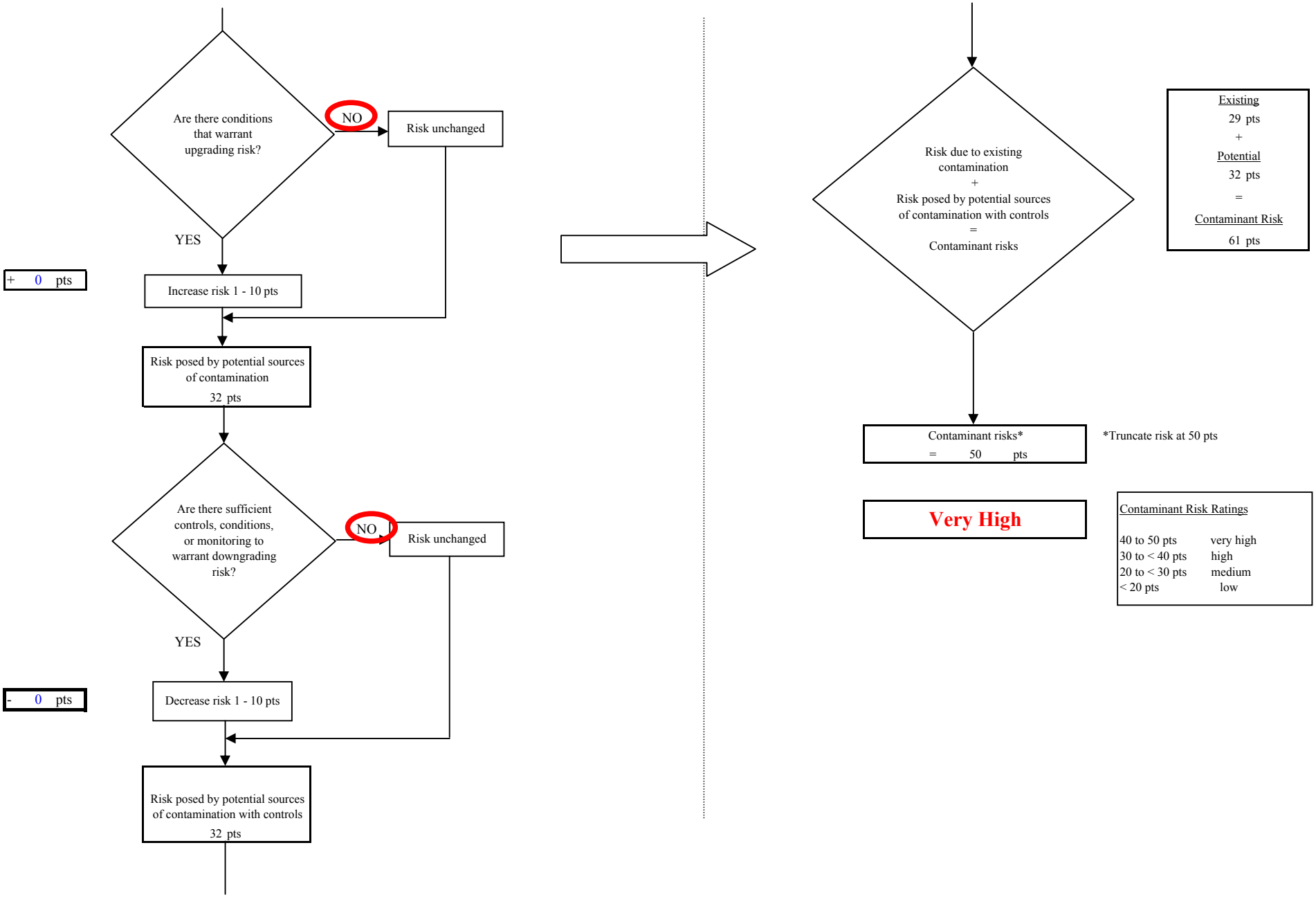


Chart 10. Vulnerability analysis for Totem Trailer Court Well No. 4 - Heavy Metals, Cyanide and Other Inorganic Chemicals

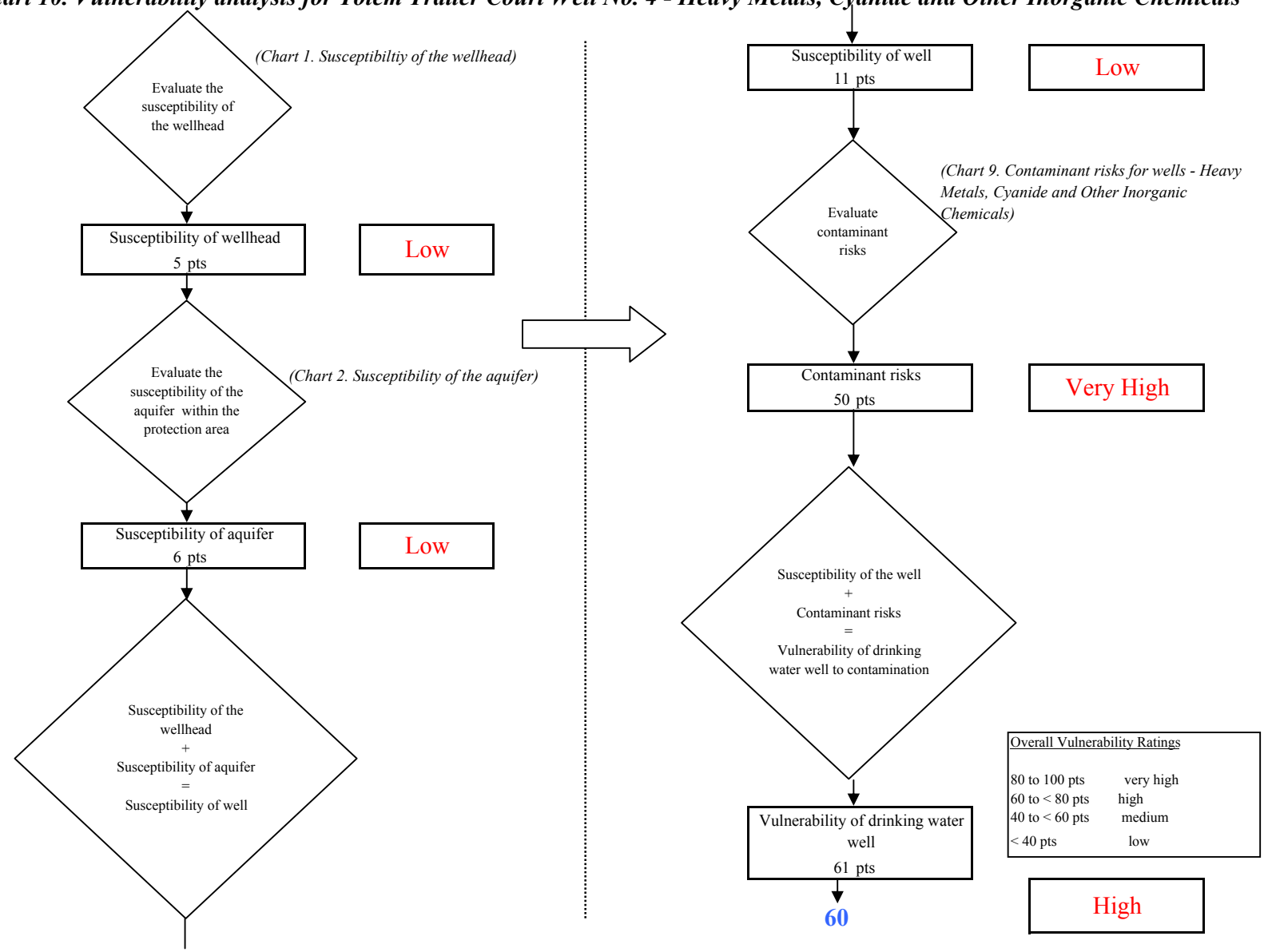


Chart 11. Contaminant risks for Totem Trailer Court Well No. 4 - Synthetic Organic Chemicals

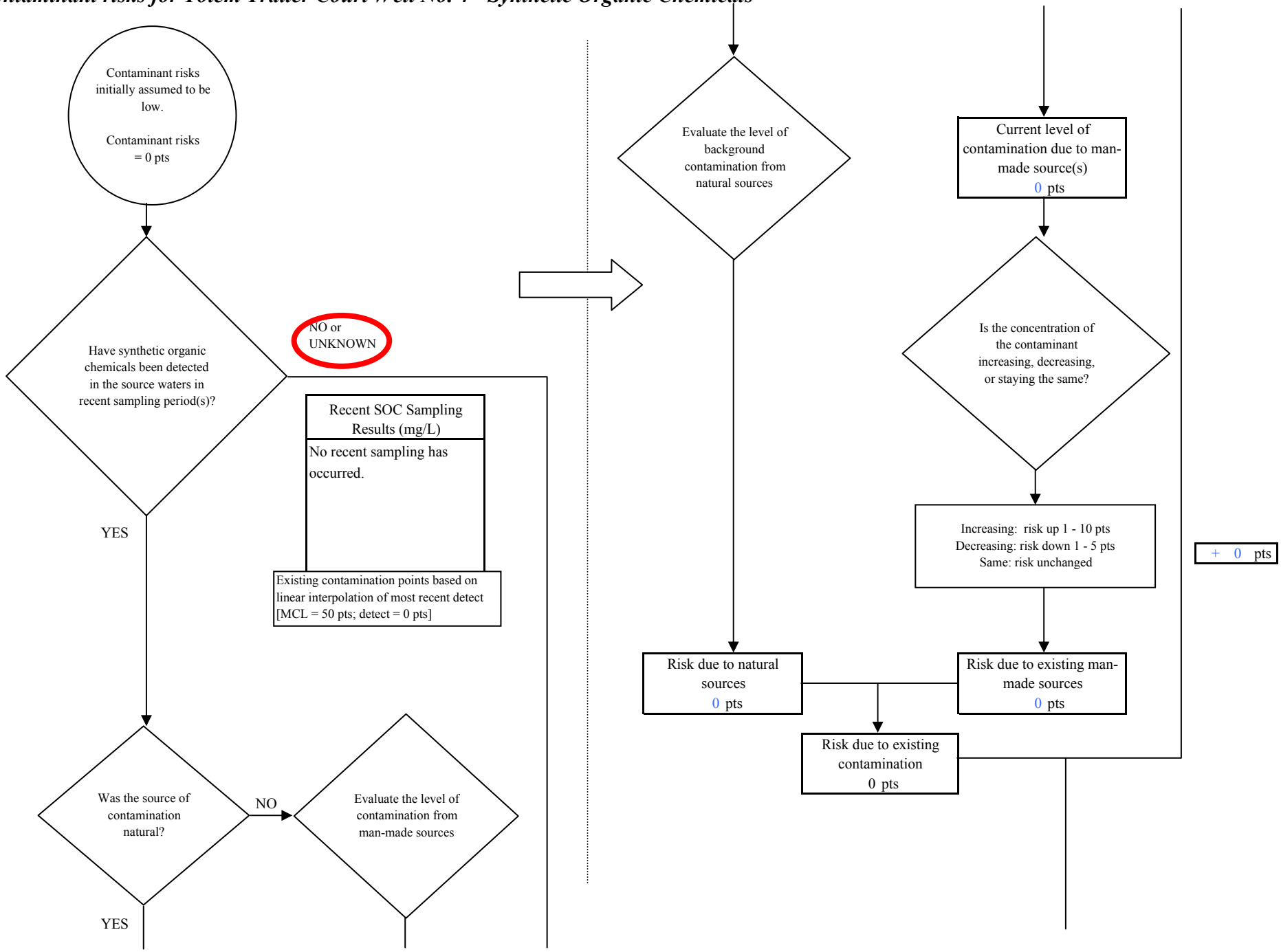


Chart 11. Contaminant risks for Totem Trailer Court Well No. 4 - Synthetic Organic Chemicals

+ 20 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

Risk Levels for Contaminant Sources identified in Zones A, B and C

	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	2	5	7

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

Initial assessment of risk posed by potential sources of contamination = 20 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 11. Contaminant risks for Totem Trailer Court Well No. 4 - Synthetic Organic Chemicals

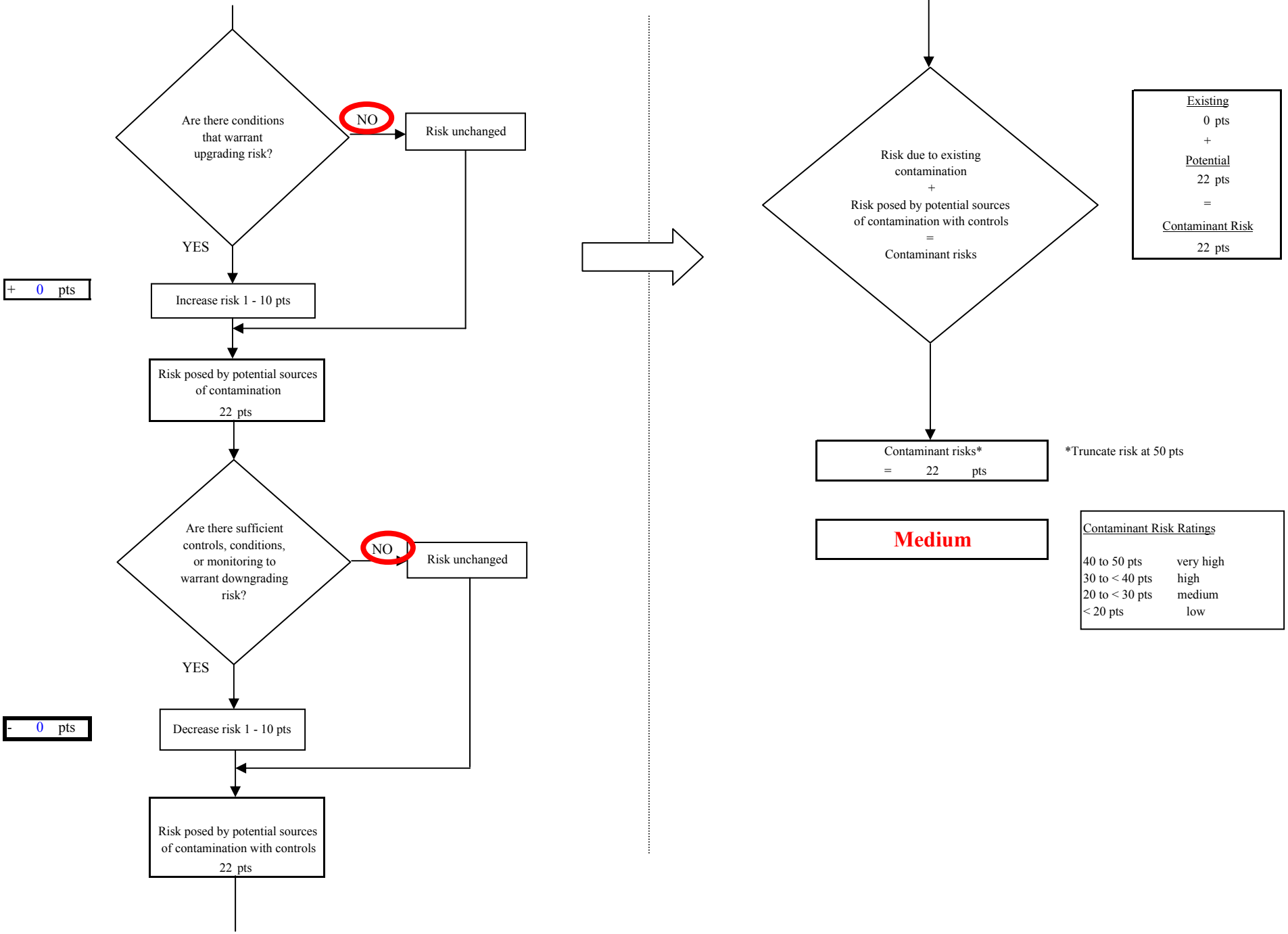


Chart 12. Vulnerability analysis for Totem Trailer Court Well No. 4 - Synthetic Organic Chemicals

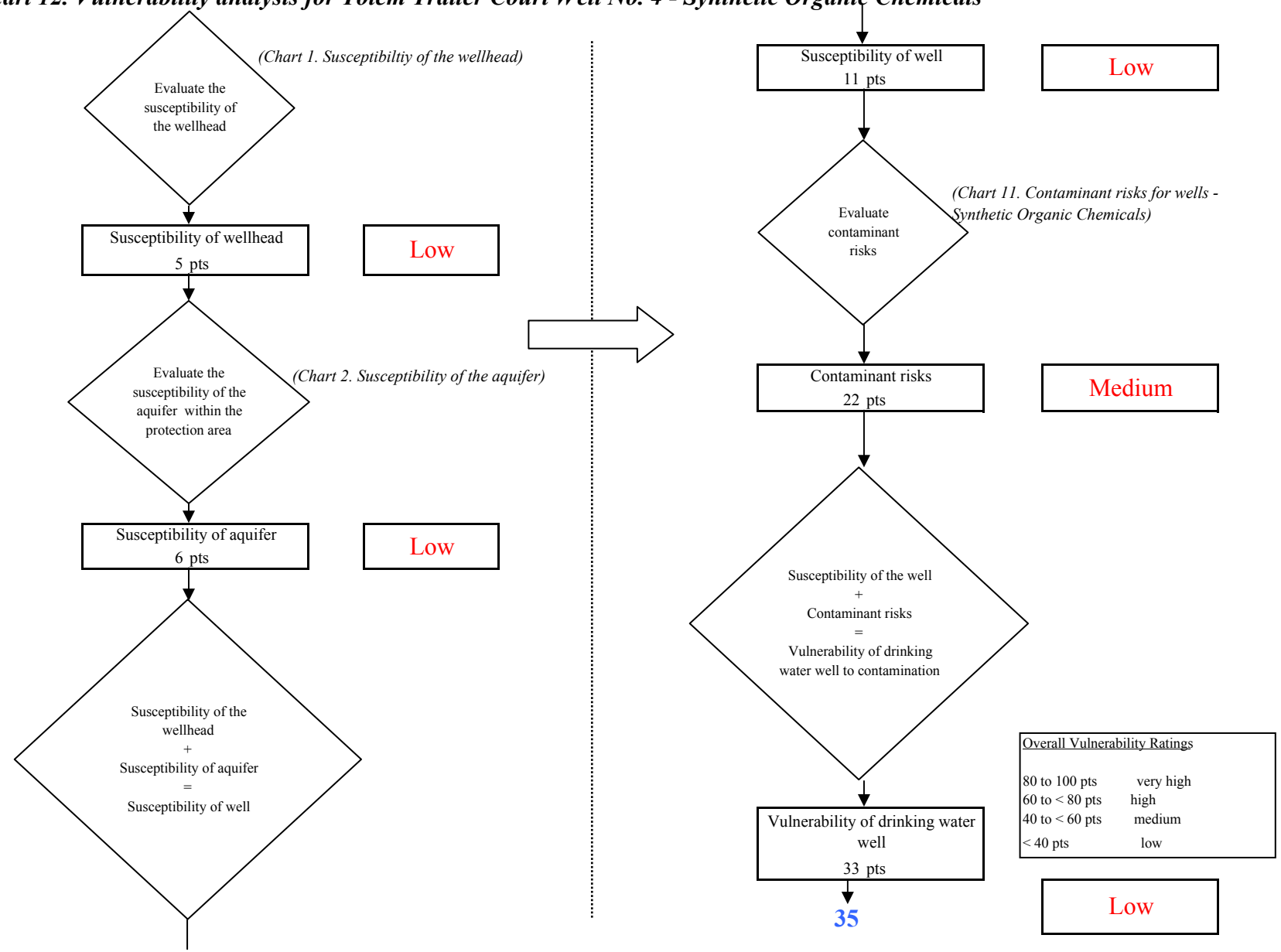


Chart 13. Contaminant risks for Totem Trailer Court Well No. 4 - Other Organic Chemicals

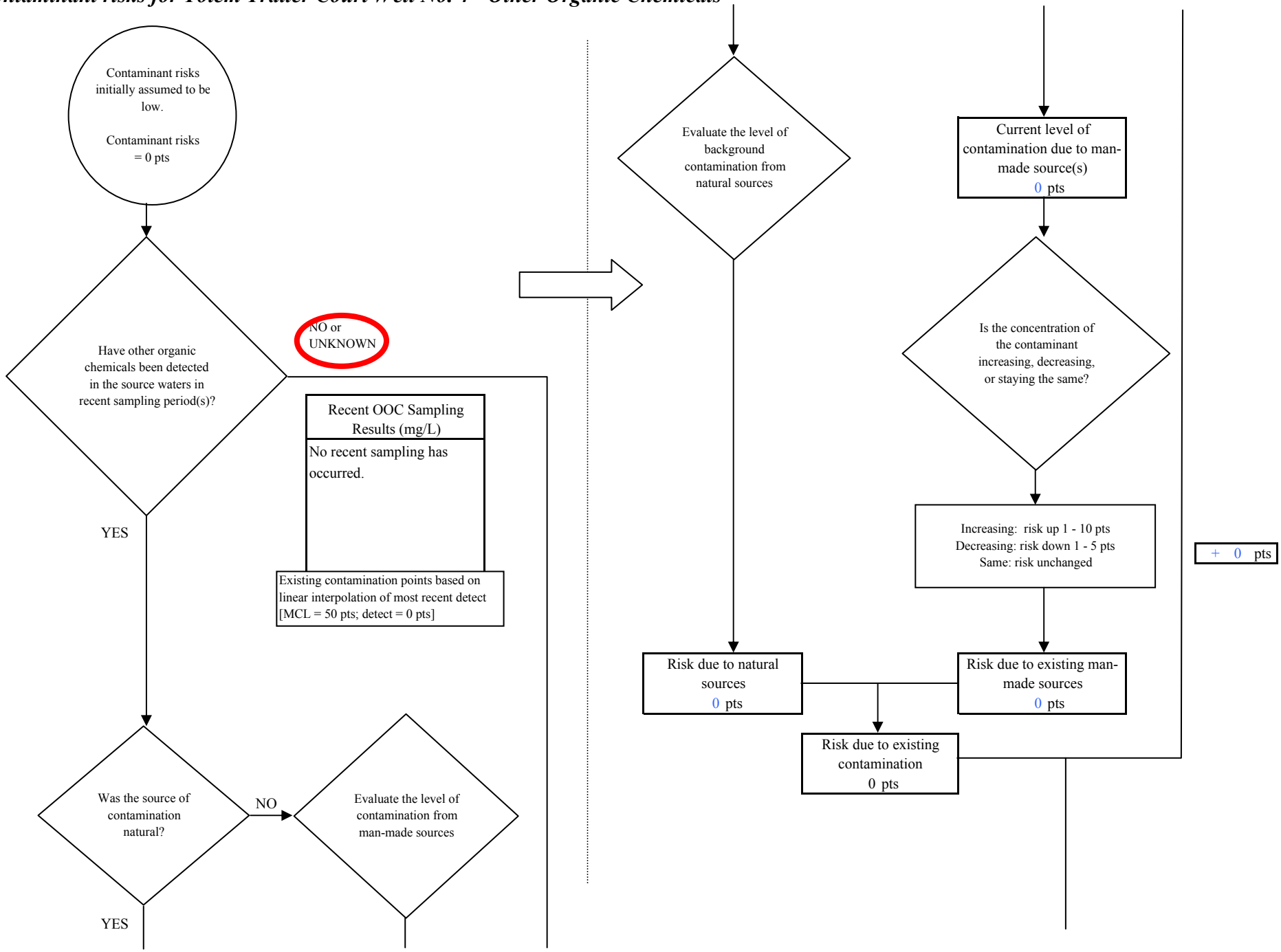


Chart 13. Contaminant risks for Totem Trailer Court Well No. 4 - Other Organic Chemicals

+ 30 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

Risk Levels for Contaminant Sources identified in Zones A, B and C

	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	1	1
Medium(s)	0	1	1
Low(s)	2	0	2

	LOW 10 pts	**MEDIUM** 20 pts	**HIGH** 30 pts	**VERY HIGH** 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 30

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

Initial assessment of risk posed by potential sources of contamination = 30 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO → Risk unchanged

YES → Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO → Risk unchanged

Sewer lines

YES → Increase risk 1 - 10 pts

+ 2 pts

Chart 13. Contaminant risks for Totem Trailer Court Well No. 4 - Other Organic Chemicals

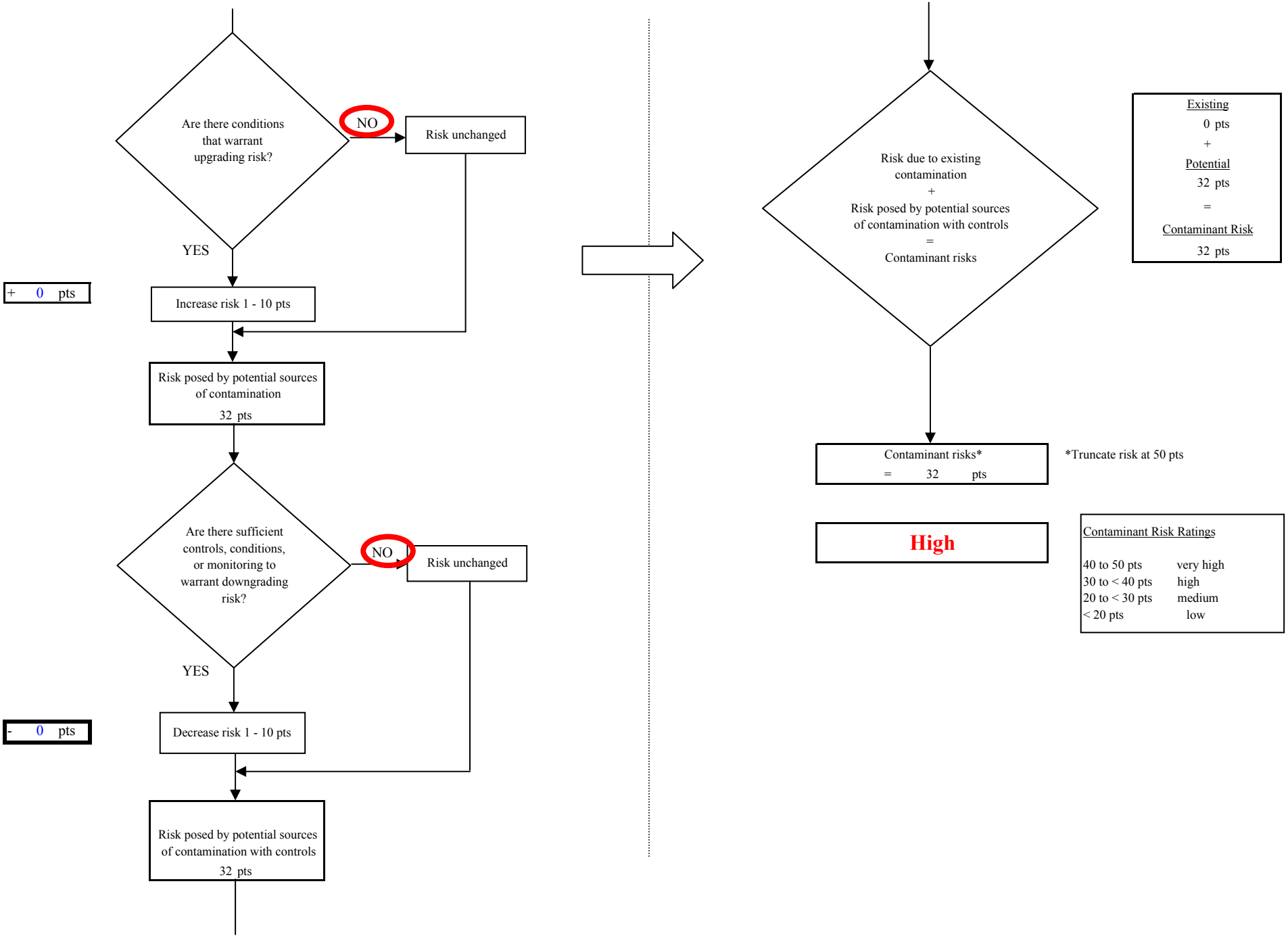


Chart 14. Vulnerability analysis for Totem Trailer Court Well No. 4 - Other Organic Chemicals